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REPORT

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ANALYSIS OF HUMAN ACTIVITY PROFILES

- USER'S MANUAL -

For:

U. S. ENVIRONMENTAL PROTECTION AGENCY
Office of Noise Abatement and Control
Washington, D. C. 20460

(Contract No. 68-01-4922)

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Description: The Human Activities Profile is composed of two human activity bases which identify the respondents' and their spouses' use of time in terms of their sequence of activities throughout the day, including each activity duration, location, and presence of human company, and background information on each respondent. In its entirety, the combined data base represents human activities for over 3500 individuals covering a sample of over 8000 person-days of activities. The data base for human activities has been stored in a computer. The computer program developed in the study allows six main types of analyses to be performed on any selected sample of respondents from these two data bases, and also provides a systematic means of integrating this unique data base on human activity so that it will be available for any additional analysis not covered in the study. The six types of analyses or output modules which can be performed on any specified sample to produce the desired tables are: 1) correlation of activity and location for any specified company situation; 2) analysis of time duration of activity for any specified location and company; 3) analysis of time duration with location for any specified activity and company; 4) analysis of time sequence and activity (time profile) for any specified location and company; 5) investigation of the relationship between primary and secondary activities for any specified location and company; and 6) analysis of activity sequence for any specified location and company.

17. KEY WORDS AND DOCUMENT ANALYSIS

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Human Behavior	Diary Studies	Function of Human Society
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1.0 INTRODUCTION

Proper evaluation of existing environmental noise problems and their subsequent alleviation and control requires a detailed knowledge of people's exposure to noise. Individuals are constantly exposed to a wide range of fixed or moving noise environments which are largely dependent on their "lifestyle" or human activity cycles. Thus, in order to develop any useful daily personal noise exposure model, detailed data on the human activity profile of the average person is required. A brief summary of published research on the topic of human activity profiles, time-budget studies, and noise exposure in daily activity is summarized in Appendix C; however, the analysis of many aspects of the human daily activity profiles relevant to determining people's noise exposure is incomplete.

The purpose of this unique study, therefore, has been to develop, for the U. S. Environmental Protection Agency, a flexible and easily-operated computer program that allows a thorough investigation and analysis of human activity profiles from two large existing data bases in terms of the relationships between people's primary activities, secondary activities, location, activity duration, and presence of human company (identified hereafter as simply company) throughout the day. The results obtained from this program will greatly enhance and supplement existing knowledge of human activities, and can be utilized for developing daily personal noise exposures models and for environmental analysis studies which may require knowledge of human activity profiles.

The two human activity data bases utilized in this program were (1) a national study conducted for 1244 respondents over a 1-day period in 1965, and (2) a similar study conducted for 2500 individuals (respondents and their spouses) over a 4-day period in 1975. These data bases (described in more detail in Section 2.0 and in Appendix C), identified the respondents' and their spouses' use of time in terms of their sequence of activities throughout the day, including each activity duration, location, and presence of human company, and also provided background information on each respondent. In its entirety, this unique data base represents human activities for over 3500 individuals covering a sample of over 8000 person-days of activities. The format and content of these two data bases will be thoroughly described in Section 2.0.

The computer program developed in this study allows six main types of analyses to be performed on any selected sample of respondents from these two data bases, and also provides a systematic means of integrating this unique data base on human activity so that it will be available for any additional analysis not covered in this study. The program was designed to allow flexibility in the selection, manipulation and outputting of data from the data base. For example, flexibility in selection of data exists in the choice of data base, sample within selected data base, type of analysis to be performed, and desired activities, locations, and company to be analyzed. The six types of analyses or output modules which can be performed on any specified sample to produce the desired tables are:

1. Correlation of activity and location for any specified company situation (output entitled "Percent of Activities at Each Location"),
2. Analysis of time duration of activity for any specified location and company ("Mean Duration of Activities"),
3. Analysis of time duration with location for any specified activity and company ("Average Time at Location"),
4. Analysis of time sequence and activity (time profile) for any specified location and company ("Percent of People Performing Activity During Each Time Period"),
5. Investigation of the relationship between primary and secondary activities for any specified location and company ("Percent of Time Secondary Activity Occurs with Primary Activity"), and
6. Analysis of activity sequence for any specified location and company ("Percent of Time Activities Occurred Before/After Another Activity").

This program was developed on Washington Computer Center's (WCC) IBM 370 system utilizing Statistical Analysis System (SAS) 79[1], a very high level computer language. SAS was selected for this program due to its ease in operator use and flexibility. This program is geared for use by people with a limited knowledge of IBM Job Control Language, as all required SAS procedures are explained in the text. Section 4.0 discusses, in detail, the SAS components needed to access the data; Section 5.0 shows how these procedures are used to produce the desired analysis; and Appendix A illustrates the additional flexibility of the program by providing examples to users interested in going somewhat beyond the scope of this program.

1.1 Reader's Guide to Manual

The User's Manual is intended for both readers interested in obtaining information about the basic types of analyses that can be retrieved from the program, and in readily producing these types of analyses; and for readers interested in gaining a more complete understanding of the capabilities of the program so that one may produce any desired variations of the basic forms of output.

For those interested in obtaining the type of information contained in the data base, a description of the basic output that can be obtained from the program, and a summary of the steps needed to retrieve this information, the following sections of the manual should be referred to in the following order:

- 2.0 The Data Base
- 3.0 Program Summary
- 4.3 The Modules

For those interested in a more complete understanding of the components of the program, and the processes involved in gaining access to the various portions of the data base and in creating modifications of the basic output, the following sections should be referred to:

- 2.0 The Data Base
- 4.0 Accessing the Data Base: Components of the Program
- 5.0 Utilizing the Program
- Appendix A: Additional Program Flexibility

2.0 THE DATA BASE

2.1 Contents of the Data Base

As mentioned in the introduction, the program data base consists of two national human activity studies, one conducted by John Robinson as part of a multinational research project[2] in 1965-66 for 1244 respondents over a 1-day period, and the other conducted by Robinson[3] in 1975 for approximately 2500 respondents and spouses, over a 4-day period. Data was gathered in the form of a diary (shown in Table 2-1) in which the respondents filled out information regarding not only the major activities of the preceding 24 hours, but also the accompanying activities, social partners (or human company) and location for each time period during the day. Background information was also gathered on the respondents, such as respondents' sex, age, marital status, number of children, working status, occupation, and industry for the 1965 study, and similar information as well as approximately 50 other background information variables for the 1975 study.

Any, or all of the six types of analysis mentioned earlier can be performed on the two main data bases, or on subsets of these data bases, so that the possible data sets that can be analyzed include:

a. 1965 complete data base - 1244 respondents

b. 1975 complete data base - 2500 respondents plus spouses, over a maximum of 4 days

c. 1975 data base subset - 2500 respondents and spouses, first day only

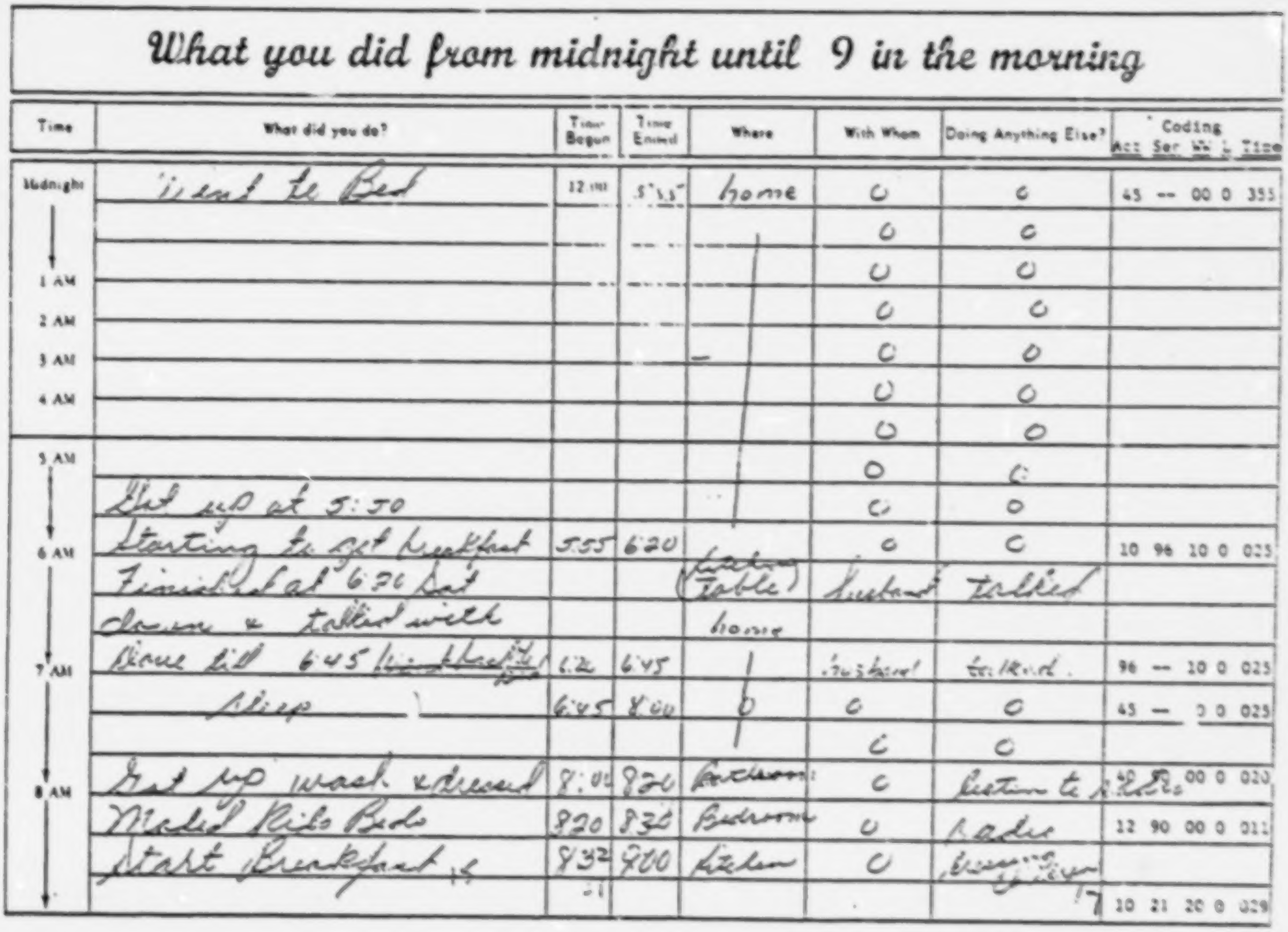
d. 1975 data base subset - 1500 respondents only, first day only

e. Any number of 1965 or 1975 data base subsets defined by selected background variables (i.e., married men only, employed women under 30, respondents living in urban areas, etc.)

In comparing results of the analysis from both the 1965 and 1975 studies, however, certain differences in the two studies must be considered. First, although both the 1965 and 1975 data bases were national in scope, the 1965 national sample consisted of primarily either employed men, employed women, or housewives, and excluded for the most part, people living in rural areas (non-SMSA's), households with no working adults, people over 65, and farm related occupations. In contrast,

Table 2-1

Sample Time-Diary Page Used in the 1965-66 Study (midnight to 9 a.m. only)
(Taken from Reference 3)



What you did from midnight until 9 in the morning

Time	What did you do?	Time Begun	Time Ended	Where	With Whom	Doing Anything Else?	Coding Act Ser Wi L Time
Midnight	Went to Bed	12:00	5:55	home	0	0	45 -- 00 0 355
					0	0	
1 AM					0	0	
2 AM					0	0	
3 AM					0	0	
4 AM					0	0	
					0	0	
5 AM					0	0	
	Got up at 5:50				0	0	
6 AM	Starting to get breakfast	5:55	6:20		0	0	10 96 10 0 025
	Finished at 6:30 Sat			(kitchen table)	husband	talked	
	down & talked with			home			
7 AM	Dave till 6:45 breakfast	6:20	6:45		husband	talked.	96 -- 10 0 025
	Sleep	6:45	8:00		0	0	45 -- 0 0 025
					0	0	
8 AM	Got up wash & dressed	8:00	8:20	bathroom	0	listen to radio	40 [illegible] 00 0 020
	Made Kids Beds	8:20	8:30	Bedroom	0	radio	12 90 00 0 011
	Start Breakfast	8:32	9:00	kitchen	0	[illegible]	
		-1					10 21 20 0 029

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the 1975 sample was properly representative of the national population, including rural areas, farmers, the unemployed, students, and the retired. Moreover, while the time diary data in the 1975 study was collected for respondents and their spouses, the 1965 data consists of respondents only.

The time periods in which the two studies were conducted also varied, with the 1965 survey data obtained during the months of November, December, March, and April; and the 1975 survey data obtained during the months of October, November, and December. Differences also arose in the day of the week surveyed. While the 1-day 1965 survey ensured equivalence in days of the week by randomly assigning respondents to rigid weekday controls, no controls were possible for the first wave (day 1) of the 1975 survey, and an abundance of Sunday diaries appeared. The additional 3 days (waves 2, 3, and 4) improved the day of the week balance; however, it must be noted that a number of the respondents dropped out after the initial day so that data for all four waves (days) are not available for all 2500 respondents. This may be a biasing factor if the entire four waves of the 1975 data base are used. One should also be aware that a bias may be contained in the 1975 data base subset of 2500 respondents over 1 day since spouses were included in this data set and hence, more married couples than single people are represented. The 1975 data subset of 1500 respondents over the first day, however, is a completely representative sample of the national population.

Differences also exist, to some extent, between the two data bases, in the way the background variables, activity variables, location variable, and company variable were defined or categorized. To facilitate the analysis of, and comparisons between, the two data bases, variables common to the two data bases have been coded as similarly as possible. A complete discussion of the data base variables is contained in Appendix B.

2.2 Format of the Data Base

The original data has been organized into two SAS data bases containing the 1975 data (ddname = SASFILE)* and the 1965 data (ddname = SASFILE2), respectively. Each consists of (1) an SAS data set containing background information (SASFILE.BACKGROUND, SASFILE2.BACKGROUND), (2) an SAS data set containing the information on each respondent's (and spouse's) activities over the period considered (SASFILE.DIARY, SASFILE2.DIARY), and (3) a directory for the data base.

---

*A ddname is the name provided on the DD statement (which specifies name and location of a data set) and subsequently used in the SAS portion of the program.

The background data set contains one record per respondent and is sorted by respondent number. Each background record consists of background information such as the respondents' sex, age, occupation, marital status, and number of children, as well as approximately 50 other background information variables for each 1975 respondent (see Appendix B, Table B-1). The diary data sets contain one diary record per activity recorded. Each diary record consists of a two (1965) or three (1975) digit code for each primary and secondary activity, a code for activity duration in minutes, a one digit code to identify who the respondent is with, and additional information listed in Table 2-3. The diary data is sorted by respondent number, then day number (1-4, 1975 only), whether respondent or spouse performed it (1975 only) and, within this ordering, activity records are arranged chronologically. In addition, there is a data set (SASLIB) containing a library of formats which is used in making the output more easily understood by assigning labels to the numerical values of the variables. A complete listing of the variables and their codings for each data set together with the formats are contained in Appendix B.

Each SAS data set contains, in addition to the data values, descriptive information concerning the data set, including a listing of the variables, their names and location on the record. This makes variable values easily accessible from the data set. The information can be printed out by including the statement

```
PROC CONTENTS DATA = data set ddname;
```

in the SAS portion of any program where the appropriate data base is called (see Figure 5-1) An example of the output from this procedure for the data set SASFILE., is shown in Tables 2-2 to 2-5. For the data set SASFILE2, this is shown in Tables 2-6 and 2-7. The directory for the data base allows these data sets to be called by name by an SAS program, rather than requiring input format statements describing where the data is located.

The data sets have been put on magnetic disc storage at WCC as well as on magnetic tape. See Section 4.1 for more details.

Table 2-2

Output Produced by PROC CONTENTS DATA = SASFILE._ALL_; Describing the Creation and Extent of the 1975 Data Set. It Is Followed by a Description of the Data Sets Contained in SASFILE.

```
                          S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

                                                CONTENTS PROCEDURE

                                      PHYSICAL CHARACTERISTICS OF OS DATA SET

DSNAME=CN.EPAJIG.S2KC.DATA1975  UNIT=SYSDA   VOL=SER=USER80  SPACE=(TRK,(600,200))  DISP=NEW  DEVICE= 3330MOD11

TRACKSIZE= 13030 BYTES  CREATED WEDNESDAY, NOVEMBER 28, 1979   407 TRACKS ALLOCATED IN 2 EXTENTS

COST IF DATA STORED ONLINE= $2.7269/DAY

                                                SAS DATA SET DIRECTORY

                                      NAME          # OBS   TRACKS  SUBEXTENTS


                                      DIARY       147335      387           1
                                      BACKGRND      1519       19           1

                                      TOTAL TRACKS USED:      407
                                      HIGH TRACK USED:        407
```

Table 2-3

Description of SASFILE.DIARY, Giving a Listing of the Variable Names, Type (Numeric or Character), Length and Position on Each Record, and the Labels Attached to Them

```
                              S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

                                       CONTENTS OF SAS DATA SET SASFILE.DIARY

TRACKS USED=387  SUBEXTENTS=1  OBSERVATIONS=147335  CREATED BY JOB EPAJIGX1  AT 20:56 WEDNESDAY, NOVEMBER 28, 1979

BY SAS RELEASE 79.2B  DSNAME=CN.EPAJIG.S2KC.DATA1975  BLKSIZE=13030  LRECL=34  OBSERVATIONS PER TRACK=383  GENERATED BY PROC SOR

                                          ALPHABETIC LIST OF VARIABLES

             #  VARIABLE  TYPE LENGTH POSITION* FORMAT        INFORMAT  LABEL

             5  COMPANY   NUM       3       15                          WHO WHERE YOU WITH?
             4  DAY       NUM       2       13                          SEQUENTIAL DIARY DAY
             3  DAY_WEEK  NUM       2       11                          DAY OF THE WEEK
             7  DURATION  NUM       3       19                          (OF ACTIVITY)
            10  LOCATION  NUM       3       28                          (OF ACTIVITY)
             2  PRIMARY   NUM       3        8                          ACTIVITY
             6  R_OR_S    CHAR      1       18                          RESPONDENT OR SPOUSE?
             1  RESP_NO   NUM       4        4                          RESPONDENT ID NUMBER
            11  SECNDARY  NUM       3       31                          ACTIVITY
             8  TBEGN     NUM       3       22                          TIME BEGAN
             9  TEND      NUM       3       25                          TIME ENDED
```

*Column position at beginning of variable code.

Table 2-4

Description of SASFILE.BACKGRND, Providing a List of the Variable Names, Type (Numeric or Character), Length and Position on Each Record, and the Attached Labels (if Any)

```
                                   CONTENTS OF SAS DATA SET SASFILE.BACKGRND

TRACKS USED=19  SUBEXTENTS=1  OBSERVATIONS=1519  CREATED BY JOB EPAJIGX1  AT 20:56 WEDNESDAY, NOVEMBER 28, 1979

BY SAS RELEASE 79.2B  DSNAME=CN.EPAJIG.S2RC.DATA1975  BLKSIZE=13030  LRECL=131  OBSERVATIONS PER TRACK=99  GENERATED BY DATA

                                          ALPHABETIC LIST OF VARIABLES

          #  VARIABLE  TYPE LENGTH POSITION  FORMAT         INFORMAT  LABEL

         46  AGE_OF_O  NUM       2      101
          8  AGE_OF_R  NUM       2       20                           AGE CATEGORY OF RESPONDENT
         45  AGE_OF_Y  NUM       2       99
         30  B_W_TV    NUM       2       69
         31  CABLE_TV  NUM       2       71
         28  CALC      NUM       2       65
         16  CAT_REGN  NUM       2       41
         10  CENSUSOC  NUM       3       24                           1970 CENSUS OCCUPATION CODE
         12  CENSUSWT  NUM       3       29
         57  CHILDSUM  NUM       2      123
         29  COLOR_TV  NUM       2       67
         58  DAYS      NUM       2      125
         23  DISHWASH  NUM       2       55
         25  DRYER     NUM       2       59
         21  ED_SUMRY  NUM       2       51
         37  ETHNICGP  NUM       2       83
         48  F_0_2     NUM       2      105
         54  F_13_17   NUM       2      117
         50  F_3_4     NUM       2      109
         52  F_5_12    NUM       2      113
         26  FREEZER   NUM       2       61
         14  HOMEVALU  NUM       4       35
         19  HOWMUCH   NUM       2       47
         22  HRS_WORK  NUM       2       53
         33  INCOME    NUM       2       75
         11  ISR_IDST  NUM       2  [illegible]                       ISR INDUSTRY CODE
         17  LIF_STS   NUM       2       43
         47  M_0_2     NUM       2      103
         53  M_13_17   NUM       2      115
         49  M_3_4     NUM       2      107
         51  M_5_12    NUM       2      111
          4  MARITLST  NUM       2       12                           MARITAL STATUS
         27  MICROVEN  NUM       2       63
          6  NO_CHILD  NUM       2       16                           FAMILY CLASSIFICATION
         44  NOCHINHU  NUM       2       97
         41  NOGE18FU  NUM       2       91
         40  NOGE18MU  NUM       2       89
         43  NOLT18FU  NUM       2       95
         42  NOLT18MU  NUM       2       93
          7  OCCUPATN  NUM       2       18                           OCCUPATIONAL SKILL TYPE
         59  ONE_DAY   NUM       2      127
         32  OWN_RENT  NUM       2       73
         13  PANEL_WT  NUM       3       32
         15  REGION    NUM       2       39
         20  RES_SCHL  NUM       2       49
         55  RESP_ED   NUM       2      119
```

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Table 2-5

Continued Description of SASFILE.BACKGRND. "Source Statement" Describes How the SASFILE.BACKGRND Data Base Was Created.

```
                     S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

  9  SEX_OF_R   NUM       2        22                            SEX OF RESPONDENT
 60  SPOUSE     NUM       2       129
 35  STRUCTYP   NUM       2        79
 56  SUP_R_WT   NUM       2       121
 38  TEMP       NUM       2        85
 34  TOT_INC    NUM       2        77
 36  TRAFFIC    NUM       2        81
  3  URBNCITY   NUM       2        10                            URBANICITY
  2  URBNIZIN   NUM       2         8                            DEGREE OF URBANIZATION
 24  WASHER     NUM       2        57
 39  WEATHER    NUM       2        87
  5  WORK_STS   NUM       2        14                            EMPLOYMENT STATUS
 18  YOUWORK    NUM       2        45

        +------------------------------ SOURCE STATEMENTS --------------------------------+
        |DATA SASFILE.BACKGRND;                                                            |
        |      MERGE BACKGRND EXTRA;BY RESP_NO;                                            |
        |********************;                                                             |
        +----------------------------------------------------------------------------------+
```

Table 2-6

Description of SASFILE2.DIARY (1965 Data Base)

```
                    S T A T I S T I C A L   A N A L Y S I S   S Y S T E M    17:21 WEDNESDAY, APRIL 30, 1980
                                      CONTENTS OF SAS DATA SET SASFILE2.DIARY
TRACKS USED=112  SUBEXTENTS=1  OBSERVATIONS=33663  CREATED BY JOB EPAJIGYO  AT 23:28 THURSDAY, DECEMBER 13, 1979
BY SAS RELEASE 79.2B  DSNAME=CN.EPAJIG.S2KC.DATA1965  BLKSIZE=13030  LRECL=42  OBSERVATIONS PER TRACK=310  GENERATED BY DATA
                                          ALPHABETIC LIST OF VARIABLES
             #  VARIABLE  TYPE LENGTH POSITION  FORMAT         INFORMAT  LABEL

             3  COMPANY   NUM     2       10                             WHO WERE YOU WITH?
             4  DURATION  NUM     4       12                             (OF ACTIVITY)
             1  HOUR      NUM     2        4
             7  LOCATION  NUM     2       20                             (OF ACTIVITY)
             5  PRIMARY   NUM     2       16                             ACTIVITY
             2  RESP_NO   NUM     4        6                             RESPONDENT ID NUMBER
             6  SECNDARY  NUM     2       18                             ACTIVITY
            10  TBEGN     NUM     8       26                             TIME BEGIN
            11  TEND      NUM     8       34                             TIME ENDED
             8  WITH      NUM     2       22
             9  WITH2     NUM     2       24

                  +--------------------------- SOURCE STATEMENTS ---------------------------------+
                  !DATA SASFILE2.DIARY;                                                          !
                  !      MERGE DIARY SET_TIME; BY RESP_NO;                                        !
                  +-------------------------------------------------------------------------------+
```

Table 2-7

Description of SASFILE2.BACKGRND (1965 Data Base)

```
                                 S T A T I S T I C A L   A N A L Y S I S   S Y S T E M   17:21 WEDNESDAY, APRIL 30, 1980
                                          CONTENTS OF SAS DATA SET SASFILE2.BACKGRND
TRACKS USED=5  SUBEXTENTS=1  OBSERVATIONS=1243  CREATED BY JOB EPAJIGYO  AT 23:28 THURSDAY, DECEMBER 13, 1979
BY SAS RELEASE 79.2B  DSNAME=CN.EPAJIG.S2KC.DATA1965  BLKSIZE=13030  LRECL=28  OBSERVATIONS PER TRACK=465  GENERATED BY PROC SORT
                                               ALPHABETIC LIST OF VARIABLES

            #  VARIABLE  TYPE LENGTH POSITION  FORMAT        INFORMAT  LABEL

            3  AGE_OF_R  NUM       2       10                          AGE OF RESPONDENT
           11  CAR       NUM       2       26
           10  DAY       NUM       2       24                          DAY OF THE WEEK
            9  ECO_CHAR  NUM       2       22                          ECOLOGICAL CHARACTERISTICS OF DWELLING
            7  MARITLST  NUM       2       18                          MARITAL STATUS
            8  NO_CHILD  NUM       2       20                          FAMILY CLASSIFICATION
            6  OCC_BRCH  NUM       2       16                          BRANCH OF OCCUPATION
            5  OCCUPATN  NUM       2       14                          OCCUPATIONAL SKILL TYPE
            1  RESP_NO   NUM       4        4                          RESPONDENT ID NUMBER
            2  SEX_OF_R  NUM       2        8                          SEX OF RESPONDENT
            4  WORK_STS  NUM       2       12                          EMPLOYMENT STATUS
```

3.0 PROGRAM SUMMARY

The computer program in this study has been developed using the Washington Computer Center (WCC) IBM 370 system. It utilizes the job control language (JCL) statements for this system in conjunction with the high level Statistical Analysis System's (SAS) computer language to perform six basic types of analyses (see Section 1.0) on the 1965 and 1975 human activity profile data bases. The results of these analyses are six tables entitled:

1. Percent of Activities at Each Location
2. Mean Duration of Activities
3. Average Time at Location
4. Percent of People Performing Activity During Each Time Period
5. Percent of Time Secondary Activity Occurs with Primary Activity, and
6. Percent of Time Activities Occur Before/After Another Activity.

In order to create these six tables for the desired data base or data base subset, the following steps are necessary:

1. The three data bases - the 1975 data base, the 1965 data base, and the format library (SASFILE, SASFILE2, and SASLIB, respectively), must be called from disc storage.

This is normally accomplished in a batch mode by using the appropriate JCL cards defined in Section 4.1.

2. The appropriate SAS commands must then be applied, again normally in a batch mode with cards, to create the desired table.

Note that, commonly, a card deck is not produced physically, but its image is created on a disc file by the user interacting with the computing system on a conversational terminal.

SAS utilizes six self-contained modules (sets of procedures) to create the six tables. Each module consists of a combination of just two general groups of statements; namely, DATA and PROC statements. DATA statement (refer to Section 4.2.1) read in the desired data base (i.e., 1975 diary data base) or with the use of simple logic-type statements, create the desired data base subset containing just those observations desired by the user (i.e., 1975 data base, first day only, male respondents only). PROC statements (see Section 4.2.2) perform the desired analyses with the use of several simple commands developed by the user according to a set of simple rules.

A different combination of these DATA and PROC statements compose each module that creates each unique table. Modifications can be made to these six basic modules to create variations in the output.

The data input cards that make up the six basic modules are defined in Section 4.3 along with a presentation of sample outputs produced by each module. The components of these modules are described in Section 4.2, so that the user can understand the purpose for each SAS statement, and can utilize this knowledge to create variations of the output such as those shown in Section 5.0 and Appendix A.

4.0 THE COMPONENTS OF THE PROGRAM

The program consists of two main components: the JCL (job control language) cards defined in Section 4.1 below, and the main portion of the program which is done in the high level SAS (Statistical Analysis System) program language, defined in Section 4.2. These two components are discussed in this section so that the user can understand the purpose of each program statement used in the construction of the six tables. Examples of the use of these components are contained in Section 4.3, where the steps needed to produce the six main forms of output are listed and described, along with some of the modifications that may be desired to produce variations of the output. Additional examples of the modifications that could be used to create variations of the six tables are provided in Section 5.0, Utilizing the Program, and more complicated illustrations of the flexibility of the program are provided in Appendix A.

4.1 The JCL Cards

The JCL Cards are used by the computer to properly interpret the SAS portion of the program. Their primary function in this program is in calling the proper data sets from disk storage to be used in the program. A listing of JCL cards is given below that will be needed for this program (in addition to the JOB card and PASSWORD card, which are standard). Statement (1) calls the SAS compiler to interpret the SAS program; (2) calls the 1975 data base (SASFILE) from disk; (3) calls the 1965 data base (SASFILE2) from disk; and (4) calls the format library (SASLIB) from disk.

```
(1) //FMT EXEC SAS9,PRINT=A
(2) //SASFILE DD UNIT=3330-1,VOL=SER=USER80,DSN=CN.EPAJIG.S2KC.DATA1975,
    // DISP=OLD
(3) //SASFILE2 DD UNIT=3330-1,VOL=SER=USER60,DSN=CN.EPAJIG.S2KC.DATA1965,
    // DISP=OLD
    //SASLIB DD DSN=CN.EPAJIG.S2KC.FMTLIB,
(4) // UNIT=3330-1,VOL=SER=USER79,
    // DISP=OLD
(5) //SASFILE  DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=SAS1975,DISP=OLD
(6) //SASFILE2 DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=SAS1965,DISP=OLD,LABEL=2
(7) //SASLIB DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=FMTLIB,DISP=OLD,LABEL=3
```

The use of these JCL statements is illustrated more thoroughly in the examples provided in Section 5.0.

Notice that (2), (3), and (4) assume you are using the disk files established on WCC's system. If not, the data sets can be called from tape by using (5), (6) and (7), respectively. Alternatively, the data sets can be transferred from tape to disk by including, in the JCL portion of the program, the JCL cards (5, 6, and 7) to call the data set from tape as well as JCL cards to create the desired file on disk, and by including in the SAS portion of the program, the following statement:

PROC COPY IN = tape data set ddname OUT = disk file ddname;

This statement may be placed anywhere within the SAS portion of the program except within another PROC or DATA step. Since magnetic disk storage can be expensive, the disk files may be deleted by specifying DISP = (OLD, DELETE) instead of DISP = OLD in the JCL statement calling the disk file. (Make sure the copy is correct before deleting the original.)

4.2 SAS

The main portion of the program is written in SAS and uses six self-contained modules (set of procedures) to generate the six desired forms of output. The procedures are used as building blocks to create the desired SAS program. SAS programs are made up of a succession of steps: (1) DATA steps used to process and modify the data, and (2) PROC steps which call packaged subroutines to analyze and/or output the data. Each step consists of one or more statements, made up of keywords (which will be indicated by being in capital letters), and variable or data set names, and are ended with a semicolon (;). SAS variable or data set names can be up to eight characters long, must begin with a letter or underscore and consist of only letters, numbers, and underscores. Statements which begin with an asterisk (*) are comment statements and have no effect on the program. The six modules have the form of one DATA step which reads in the data and selects out the variables and observations desired to be processed by the module, followed by one or more PROC steps which put the data into the desired form and output it. Additional DATA steps may be added to produce desired information about the size and makeup of the data set used by the module.

4.2.1 The DATA Step

Each DATA step creates a new data set. The DATA step is primarily used in this program to create a data set containing just those variables and observations desired by the user to be used in the module. For this purpose it consists of a sequence of SAS statements which input one or more of the data sets and select the observations necessary to create the desired data subset. These statements have the following form:

(1) DATA set name (if desired);

(2) SET data set name(s); or MERGE data set names;
BY variable name;

(3) Data selection criteria, if any, (using IF statement)

(4) Statements creating new variables (if any)

(5) KEEP variable names;

Inputting the Data

The DATA statement (1) indicates that this is a DATA step and names the data set created by the DATA step. A name is needed only if this data set is to be referred to by name at some later point in the program; however, the DATA statement is required regardless. The MERGE or SET statements (2) input the indicated data sets one observation at a time, but in different fashions, and are used for different purposes. The SET statement concatenates the data sets; that is, the data sets are read in sequentially with the first observation of the next data set following the last observation of the previous data set. If no data set name is given on the SET statement, the last data set created in the program is automatically used. The SET statement is used to read in one or more of the data bases. An example is the following:

```
SET SASFILE.DIARY;
```

which would input the complete 1975 diary data set for use in one of the modules.

The MERGE statement is used to combine the background data set with the diary data set when a sample based on background variables is desired (i.e., employed men only, respondents living in the west, etc.). The MERGE statement combines the data sets, using the variable(s) given in the BY statement to match observations. Thus, the diary and background data sets could be merged by respondent number (RESP_NO) in this way which would, in effect, add all the background variables onto each observation of the diary data set. For example, the 1975 background and diary data sets could be combined with the statements:

```
MERGE SASFILE.DIARY SASFILE.BACKGRND; BY RESP_NO;
```

This would be necessary if it was desired to use background variables in the data selection process. Whenever a BY statement is used, the data set must be sorted in the order of the variables listed in the BY statement. (Background data is only sorted by respondent number however, so the variable RESP_NO is the only one that could be used to combine the background data with the diary.)

The inclusion of the BY statement creates two new variables for each variable listed in the BY statement: FIRST.variable name and LAST.variable name. FIRST. variable name is equal to 1 if the current observation read in is the first to have a given value of the variable, if not, FIRST.variable name is equal to 0. LAST.variable name is equal to 1 if the current observation read in is the last to have a given value of the variable; if not, it is equal to 0. Thus, for example, if the 1975 diary data were read in by:

```
SET SASFILE.DIARY;
    BY RESP__NO;
```

then FIRST.RESP__NO would equal 1 when the first activity of a respondent were read in and LAST.RESP__NO would equal 1 when the last acitivity given for that respondent were read in. Thus, these variables would identify the first and last activity of each respondent.

The KEEP statement (5) specifies which variables are to be included in the data set created by the DATA step. Only the variables listed on the KEEP statement are included. Thus the statement:

```
KEEP PRIMARY SECNDARY;
```

would result in only the variables PRIMARY (primary activity) and SECNDARY (secondary activity) being included in the new data set. If there is no KEEP statement, all the variables in the data set read in are included in the new data set.

DATA Selection:

Once the data has been read in, it is necessary to select which observations are desired to form the new data set. This is done by using the subsetting IF statement (3), which has the following form:

```
IF expression;
```

at the point in the data step where the comment statement *INSERT SELECTION CRITERIA; is placed. Only those observations for which the expression is true will be included in the new data set. The expression will normally have the form of a series of comparisons combined by the use of the logical operators AND and OR. Comparisons normally compare a variable with a constant via a comparison operator, e.g.,

IF DAY = 1;

Alternatively, a comparison can consist simply of a variable name. The expression is then considered true if the variable equals 1. Thus,

IF DAY;

is equivalent to the previous statement. The constants will normally be integers as the variables have been coded numerically, with the exception of R_OR_S (respondent or spouse) which is coded with characters. Character constants must be enclosed in single quotes.

The comparison operators are:

=,EQ	equal to	ŧ ,NE	not equal to
> ,GT	greater than	≥ ,GE	greater than or equal to
< ,LT	less than	≤ ,LE	less than or equal to

The comparisons can be combined by using logical operators and sets of parentheses to determine the order in which the logical operators are performed. In this way, any set of criteria involving the variables of the background or diary data sets can be used to select out the desired observations. Thus, the desired subsets of the 1975 data base can be obtained in this way. For example, the data for respondents and spouses, first day only, can be obtained by inserting:

IF DAY EQ 1;

while the data for respondents only, first day only, can be obtained by inserting

IF R_OR_S = 'R' AND DAY = 1;

into the data step. More complicated combinations are possible and many examples of such are given in Section 5.0.

Other Uses of the DATA Step:

When a subset of the data has been selected in this fashion, it may be desirable to know some things about it, such as case (1) the number of persons (or respondents) in the subset (sample size), or case (2) the distribution by day of the week of the subset (since activities are likely to vary greatly depending on the day of the week). This can be done by adding a second DATA step in case (1), or a PROC SORT step and a DATA step in case (2). Figure 4-1 contains listings for module 1 (which produces output form 1) for the 1975 data base with these additions as an example. They can be added to any of the modules in a similar fashion, the additional steps following the initial DATA step. Note that the second DATA step uses variables RESP_NO and R_OR_S in case (1) and variable DAY_WEEK in case (2). Therefore, these variables must be included in the KEEP statement in the first DATA step. Also note that a data set name must be given on the DATA statement of the first DATA step since it is referred to by name later in the program. (WORK 1 was used in this case but any SAS name not previously used is acceptable.)

As it stands, case (1) counts both respondents and spouses to obtain the sample size. To get just respondents, drop the variable R_OR_S from the KEEP and BY statements and delete the statement:

```
IF R_OR_S ='R' THEN N = N + 1;
```

This is necessary for the 1965 diary data since it only covers respondents. An example of this is given in Section 5.0. The sample size will be printed out in the output prior to the table created by the procedure. In case (2) the results are printed out in the program log.

4.2.2 The PROC Step

The PROC steps call prepackaged subroutines and specify additional information and options needed by these subroutines to produce the desired results. They begin with a PROC statement which specifies which subroutine is to be used and certain options available. It has the form:

```
PROC subroutine name (possible options);
```

We will be concerned with four of these subroutines:

PROC SORT, PROC FREQ, PROC MEANS, PROC PRINT.

All of these subroutines include the option DATA = data set name which specifies which data set is to be used and is included in the PROC statement. If this option is not included, the last data set created is automatically used. The purpose of each of the PROC steps are briefly described below, and examples of all these subroutines are provided in the next section.

```
*****************
       1
****************;
DATA WORK1;
      SET SASFILE.DIARY;                                            }
      ACTIVITY=PRIMARY;                                             }
* INSERT SELECTION CRITERIA;                                        } Initial DATA Step
      KEEP ACTIVITY LOCATION COMPANY RESP_NO R_OR_S;                }
DATA;
  SET WORK1 END=EOF;                                                }
      BY RESP_NO;                                                   }
  IF LAST.RESP_NO;                                                  } Additional Step
  N+1;                                                              }   to Produce
  IF R_OR_S='S' THEN N=N+1;                                         }     Sample
  IF EOF THEN DO;                                                   }      Size
   FILE PRINT;                                                      }
   PUT / @20 'NUMBER OF PERSONS IN SAMPLE' @50 N;                   }
   END;                                                             }
PROC FREQ DATA=WORK1;
      TABLES COMPANY*ACTIVITY*LOCATION;
      FORMAT ACTIVITY ACTIV. LOCATION LOCATN. COMPANY COMPANYC.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 PERCENT OF ACTIVITIES AT EACH LOCATION;
*****************
       1
****************;
DATA WORK1;
      SET SASFILE.DIARY;                                            }
      ACTIVITY=PRIMARY;                                             }
* INSERT SELECTION CRITERIA;                                        } Initial DATA Step
      KEEP ACTIVITY LOCATION COMPANY DAY_WEEK;                      }
PROC SORT;
      BY DAY_WEEK;                                                  }
DATA;                                                               }
      SET;                                                          }
      BY DAY_WEEK;                                                  } Additional Step
      N+1;                                                          }   to Produce
      IF LAST.DAY_WEEK THEN DO;                                     }  Day of Week
      PUT DAY_WEEK DAYWEEK. N=;                                     }  Distribution
      N=0;                                                          }   for Sample
      END;                                                          }
PROC FREQ DATA=WORK1;
      TABLES COMPANY*ACTIVITY*LOCATION;
      FORMAT LOCATION LOCATN. COMPANY COMPANYC. ACTIVITY ACTIV.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 PERCENT OF ACTIVITIES AT EACH LOCATION;
```

Figure 4-1. Additional Uses of DATA Step to Obtain Sample Size and Day of Week Distribution. From These Examples, Output 1 "Percent of Activities at Each Location" for the Complete 1975 Data Base Would Be Produced. (See Sections 4.2.1 and 4.2.2 for explanation of SAS program statements.)

PROC SORT creates a new data set in which the observations of the original data set are sorted according to the variables listed in the BY statement in a nested fashion. That is, the data is sorted by the first variable listed and then within each group created by this sorting (where the first variable has a fixed value) the data is sorted by the second variable, and so forth. The subroutine consists of the PROC statement followed by a BY statement. The name of the sorted data set created by the subroutine can be specified by including the option OUT = data set name on the PROC statement. Otherwise, as in the modules presented here, it is given the name of the unsorted data set, which is then deleted.

PROC FREQ produces frequency tables. The form of the tables is determined by the TABLES statement which follows the PROC statement. This statement has the following form:

TABLES variable 1* variable 2* . . . / (options);

The values of the last variable listed will produce the columns, the next to last will produce the rows. A separate table will be produced for each value (or combination of values) of the other variable(s). Any number of variables can be listed, but the length of output increases rapidly with the number of variables. If only one variable is listed, a one-way frequency table is produced.

Each cell of the tables produced contains (from top to bottom) the frequency count, overall percentage, row percentage and column percentage (see Table 4-1); but these can be suppressed by adding the options NOFREQ, NOPERCENT, NOROW, NOCOL (respectively), to the TABLE statement. In addition, adding the option MISSING will cause the count of missing values to be included in calculating the percentages.

The inclusion of a WEIGHT statement, having the form:

WEIGHT variable name;

will cause the frequency to be weighted by the variable listed in the tables produced. For instance, WEIGHT DURATION; used in the module to produce the "Percent of Activities at Each Location" table, would weight the activities by the length of time spent at them.

PROC MEANS is used to calculate simple descriptive statistics for the numeric variables. The statistics desired are specified in the options list of the PROC statement. These include:

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Table 4-1

Analysis of Activity with Location

```
                      1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E
                             PERCENT OF ACTIVITIES AT EACH LOCATION

                                  TABLE OF ACTIVITY BY LOCATION
                                 CONTROLLING FOR COMPANY=ALONE

ACTIVITY      LOCATION  (OF ACTIVITY)

FREQUENCY          |
 PERCENT           |
 ROW PCT           |
 COL PCT           |MISSING |HOME     |AT PLACE|OTHER'S |RESTAUR-|INDOOR  |OUTDOOR |IN      |OTHER,  |
                   |DATA    |         | OF WORK|HOME    |ANT,BAR |LEISURE |LEISURE |TRANSIT |PUB.PLC.|  TOTAL
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
WORK               |      0 |      7  |      4 |      0 |      0 |      0 |      0 |     11 |      0 |    22 ← A
                   |   0.00 |   2.02  |   1.15 |   0.00 |   0.00 |   0.00 |   0.00 |   3.17 |   0.00 |  6.34 ← B
                   |   0.00 |  31.82  |  18.18 |   0.00 |   0.00 |   0.00 |   0.00 |  50.00 |   0.00 |
                   |   0.00 |   2.63  | 100.00 |   0.00 |   0.00 |   0.00 |   0.00 |  22.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
TRAVEL             |      1 |      0  |      0 |      0 |      0 |      0 |      0 |     39 |      0 |    40
                   |   0.29 |   0.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  11.24 |   0.00 | 11.53
                   |   2.50 |   0.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  97.50 |   0.00 |
                   |  20.00 |   0.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  78.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
INDOOR  HOUSEWK    |      0 |     69  |      0 |      0 |      0 |      0 |      0 |      0 |      0 |    69
                   |   0.00 |  19.88  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 | 19.88
                   |   0.00 | 100.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
                   |   0.00 |  25.94  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
OUTDOOR HOUSEWK    |      0 |      5  |      0 |      0 |      0 |      0 |      0 |      0 |      0 |     5
                   |   0.00 |   1.44  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  1.44
                   |   0.00 | 100.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
                   |   0.00 |   1.88  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
CHILD   CARE       |      0 |      1  |      0 |      0 |      0 |      0 |      0 |      0 |      0 |     1
                   |   0.00 |   0.29  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  0.29
                   |   0.00 | 100.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
                   |   0.00 |   0.38  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
CONVERSATION       |      0 |     12  |      0 |      0 |      0 |      0 |      0 |      0 |      0 |    12
                   |   0.00 |   3.46  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |  3.46
                   |   0.00 | 100.00  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
                   |   0.00 |   4.51  |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
TOTAL          C →       5      266        4        2        1        2        1       50       16      347
               D →    1.44    76.66     1.15     0.58     0.29     0.58     0.29    14.41     4.61   100.00
```

The top line (frequency) in each cell indicates the number of times a location was recorded for a given activity performed alone. The second line (percent) is the percentage of all recorded activities (performed while alone) that consisted of each activity/location combination. The third line (row percent) provides, for a given activity, the percentage of times it occurred at each location. The last line (column percent) provides the percentage of all recordings that occurred at a given location for each activity. The row totals provide (A) the total number of times an activity was recorded, and (B) the percentage of recordings for each activity (number of times each activity was recorded divided by the total number of recorded activities). The column totals provide (C) the total number of times each location was recorded, and (D) the percent of all recorded activities occurring at a given location. A and C are automatically printed out with frequency, B and D with the percent, and C is also printed out with the column percent. The column totals (C and D) are printed on each page of output for a table; however, it must be noted that these are column totals for the entire table, not for each individual page.

N	number of observations	MAX	largest value
NMISS	number of missing values	RANGE	range
MEAN	mean	SUM	sum
STD	standard deviation	VAR	variance
MIN	smallest value		

In addition, the option NOPRINT suppresses the printing out of the descriptive statistics. The variables for which statistics are desired are specified in the VAR statement, which has the form:

```
VAR variable name(s);
```

If this is not included, then statistics are calculated for all numeric variables except those specified in the BY statement. If a BY statement is included in the PROC step, the statistics are produced for each group created by the BY statement (i.e., for each set of observations having the same value(s) for the variable(s) in the BY statement).

The OUTPUT statement has the form:

```
OUTPUT OUT = data set name  statistic name = variable name(s)...;
```

This is used to create a new data set containing the descriptive statistics and to specify the data set's name (if needed) and the name of the statistics to be included in the new data set. One variable name should be given for each variable for which that statistic is to be included. For instance, the statement:

```
OUTPUT MEAN = MINUTES STD = STD_DEV SUM = SUMTIME NUM_RESP;
```

specifies that the mean of the first variable in the VAR statement is named MINUTES, its standard deviation is named STD_DEV and its sum SUMTIME. The sum of the second variable is named NUM_RESP. All these variables, plus the variables listed in the BY statement (if there is one) are included in the new data set, but the mean and standard deviation of the second variable are not (since they are not named in the OUTPUT statement). There will be one observation for each group of observations for which the statistics are calculated.

PROC PRINT is used to print out a data set. The VAR statement specifies which variables are to be printed out; the inclusion of a BY statement results in separate listings for each group of observations sharing a fixed value of the variable(s) in the BY statement. If an ID statement is included, having the form:

ID variable name(s);

then instead of printing the observation number, the values of the variable(s) in the ID statement are printed at the beginning of each line. Examples of all these subroutines are given in the section on the modules.

Titles and Labels

In order to clarify the meaning of the output produced, TITLE and LABEL statements have been used. The TITLE statements specify the heading to be put at the top of each page of output and are included in the PROC or DATA step that produces the output. They have the form:

TITLE(n) heading to be used;

where n specifies the line number. Thus, TITLE3 would specify the heading for the third line of each output page. If the first line is intended, no number need be given. Titles stay in effect until superceded by a new TITLE statement, at which time all TITLE statements with an n equal or larger than that of the new TITLE statement are cancelled. Thus, since all the modules use the heading:

1975 HUMAN ACTIVIES PROGRAM or 1965 HUMAN ACTIVITIES PROGRAM

on the first line, the appropriate TITLE statement need only be given in the first module (unless the data base is changed, i.e., from 1975 to 1965 for each module).

Sometimes variable names are insufficiently explanatory and need to be supplemented by additional descriptive phrases. This can be done by using the LABEL statement. It has the form:

LABEL variable = label . . . ;

If the LABEL statement is included in the DATA step, the label(s) will be associated with the variable(s) for the remainder of the program. If it is in the PROC step, they will be associated with the variable(s) only for that step. In PROC FREQ the labels follow the variable name in the output; in PROC PRINT the labels replace the variable names in the headings, but are ignored in the table itself.

A number of labels are included in the 1975 and 1965 data bases and will be used automatically unless superceded by a new LABEL statement. A listing of these labels can be obtained by using PROC CONTENTS for the appropriate data set, as shown in Figures 2-3 to 2-7.

Sometimes a new name will clarify the purpose of a variable. This can be done using the RENAME statement, which should be included in the DATA step. It has the form:

RENAME old variable name = new variable name(s) . . . ;

The new name is then used for the remainder of the program. However, if a KEEP statement is used in the DATA step containing the RENAME statement, then the variable must be listed under its old name. An example of this would be the following statement:

RENAME PRIMARY = ACTIVITY;

After the DATA step containing this statement the variable PRIMARY would be named ACTIVITY for the remainder of the program. If the DATA step contained a KEEP statement, the variable would have to be listed as PRIMARY in order to be kept.

Formats

The variables of the data base are mostly coded numerically, which makes their interpretation awkward. To make the output more intelligible, a file of formats (SASLIB) has been established which can be used to tag the numeric values of the variables with meaningful names. Each value is provided with a descriptive phrase which is substituted for it in the output. If the JCL cards calling SASLIB are included in the program, then the formats can be utilized by inclusion of a FORMAT statement which specifies the format desired for the variable. It has the form:

FORMAT variable name format name.;

Since some of the variables are coded differently in the 1965 and 1975 data bases (e.g., PRIMARY), they use different formats. For example, a FORMAT statement for the 1975 data base might be:

FORMAT LOCATION LOCATN. PRIMARY ACTIV.;

while the same FORMAT statement for the 1965 data base would be:

FORMAT LOCATION LOCATN. PRIMARYACTIV2_.;

If the format statement is included in a PROC step it associates the format with the variable only for the duration of that step. If it is included in a DATA step it is associated for the remainder of the program. A listing of the formats is included at the end of Appendix B.

If it is necessary to create new formats for use in the output, this can be done using PROC FORMAT. It has the form:

PROC FORMAT;

VALUE format name variable value = label . . . ;

Labels may be up to 40 characters long. If the symbols = _ ; , /or . are used, the label must be enclosed in single quotes. Format names may not end in a number and, for character variables, they must begin with a dollar sign ($). This PROC step should precede the step using the formats. The formats are called in using a FORMAT statement as outlined above. The format names must fulfill the restrictions on SAS names and must be different from those used in SASLIB. There are several examples of this in Section 5.0.

4.3 The Modules

The modules combine the different components of SAS described above in order to produce the six desired forms of output. These are discussed below as well as simple modifications that can be made to produce various forms of the output. The output from these modules is provided at the end of each section. It should be noted that for all tables produced by these modules, which involve multiple pages, the word "continued" will appear in the lower left hand corner on all but the last page.

4.3.1 Output 1: Percent of Activities at Each Location

Module 1 (shown below) produces frequency tables of primary activity versus location for the different values of the company variable for the complete 1975 data base. This is a simple application of PROC FREQ. Module 1 also demonstrates the use of FORMAT and TITLE statements to improve the form of the output. The output from this module is provided in Table 4-2.

```
******************
        1
*****************;
DATA;
      SET SASFILE.DIARY;
      ACTIVITY=PRIMARY;
* INSERT SELECTION CRITERIA;
      KEEP ACTIVITY LOCATION COMPANY;
PROC FREQ;
      TABLES COMPANY*ACTIVITY*LOCATION;
      FORMAT LOCATION LOCATN. COMPANY COMPANYC. ACTIVITY ACTIV.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 PERCENT OF ACTIVITIES AT EACH LOCATION;
```

Table 4-2

```
                         1 9 7 5    H U M A N    A C T I V I T I E S    P R O F I L E
                                  PERCENT OF ACTIVITIES AT EACH LOCATION

                                        TABLE OF ACTIVITY BY LOCATION
                                         CONTROLLING FOR COMPANY=ALONE

ACTIVITY      LOCATION  (OF ACTIVITY)

FREQUENCY       I
 PERCENT        I
 ROW PCT        I
 COL PCT        IMISSING IHOME    IAT PLACEIOTHER'S IRESTAUR-IINDOOR  IOUTDOOR IIN      IOTHER,  I
                IDATA    I        I OF WORKIHOME    IANT,BAR ILEISURE ILEISURE ITRANSIT IPUB.BLD.I  TOTAL
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
WORK            I      0 I      7 I      4 I      0 I      0 I      0 I      0 I     11 I      0 I     22
                I   0.00 I   2.02 I   1.15 I   0.00 I   0.00 I   0.00 I   0.00 I   3.17 I   0.00 I   6.34
                I   0.00 I  31.82 I  18.18 I   0.00 I   0.00 I   0.00 I   0.00 I  50.00 I   0.00 I
                I   0.00 I   2.63 I 100.00 I   0.00 I   0.00 I   0.00 I   0.00 I  22.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TRAVEL          I      1 I      0 I      0 I      0 I      0 I      0 I      0 I     39 I      0 I     40
                I   0.29 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  11.24 I   0.00 I  11.53
                I   2.50 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  97.50 I   0.00 I
                I  20.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  78.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
INDOOR  HOUSEWK I      0 I     69 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I     69
                I   0.00 I  19.88 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  19.88
                I   0.00 I 100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                I   0.00 I  25.94 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
OUTDOOR HOUSEWK I      0 I      5 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      5
                I   0.00 I   1.44 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   1.44
                I   0.00 I 100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                I   0.00 I   1.88 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
CHILD    CARE   I      0 I      1 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      1
                I   0.00 I   0.29 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.29
                I   0.00 I 100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                I   0.00 I   0.38 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
CONVERSATION    I      0 I     12 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I     12
                I   0.00 I   3.46 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   3.46
                I   0.00 I 100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                I   0.00 I   4.51 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TOTAL                  5      256        4        2        1        2        1       50       16      347
                    1.44    76.66     1.15     0.58     0.29     0.58     0.29    14.41     4.61   100.00
(CONTINUED)
```

Only a small sample of 9 respondents is used in this illustration so that many categories contain no (0) recorded activities. Procedures controlling for company were used so that a separate table is produced for each company value. Each table consists of three computerized printout sheets. The other tables produced by this module for each company value are not included here. Refer back to Table 4-1 for a definition of the figures contained in each cell of the table. (Note that this table, and all other tables involving multiple pages, are designated by the word (continued) on the lower left corner of all but the last page. The bottom "total" line(s) apply only to the entire table, not to each page.)

Table 4-2 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF ACTIVITIES AT EACH LOCATION

TABLE OF ACTIVITY BY LOCATION
CONTROLLING FOR COMPANY=ALONE

ACTIVITY   LOCATION (OF ACTIVITY)

FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAUR-ANT,BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, (PUB.BLD.)	TOTAL
SHOPPING	0 0.00 0.00 0.00	1 0.29 6.25 0.38	0 0.00 0.00 0.00	1 0.29 6.25 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	14 4.03 87.50 87.50	16 4.61
PERSONAL CARE	4 1.15 10.81 80.00	32 9.22 86.49 12.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.29 2.70 6.25	37 10.66
EATING	0 0.00 0.00 0.00	40 11.53 95.24 15.[illegible]4	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.29 2.38 100.00	1 0.29 2.38 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	42 12.10
SLEEPING	0 0.00 0.00 0.00	39 11.24 95.12 14.66	0 0.00 0.00 0.00	1 0.29 2.44 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.29 2.44 6.25	41 11.82
ORGANIZATIONS	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.29 100.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.29
SOCIAL ACTIVITY	0 . . .	0 . . .	0 . . .	0 . . .	0 . . .	0 . . .	0 . . .	0 . . .	0 . . .	0 0.00
TOTAL	5 1.44	266 76.66	4 1.15	2 0.58	1 0.29	2 0.58	1 0.29	50 14.41	16 4.61	347 100.00

(CONTINUED)

A dot indicates that the location did not occur for the given sample.

Table 4-2 (Concluded)

```
                        1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E
                                   PERCENT OF ACTIVITIES AT EACH LOCATION

                                        TABLE OF ACTIVITY BY LOCATION
                                         CONTROLLING FOR COMPANY=ALONE

ACTIVITY        LOCATION  (OF ACTIVITY)

FREQUENCY          I
 PERCENT           I
 ROW PCT           I
 COL PCT           IMISSING IHOME     IAT PLACEIOTHER'S IRESTAUR-IINDOOR  IOUTDOOR IIN       IOTHER,  I
                   IDATA    I         I OF WORKIHOME    IANT,BAR ILEISURE ILEISURE ITRANSIT IPUB.BLD.I  TOTAL
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
ACTIVE  LEISURE    I      0 I       0 I      0 I      0 I      0 I      0 I      1 I      0 I      0 I      1
                   I   0.00 I    0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.29 I   0.00 I   0.00 I   0.29
                   I   0.00 I    0.00 I   0.00 I   0.00 I   0.00 I   0.00 I 100.00 I   0.00 I   0.00 I
                   I   0.00 I    0.00 I   0.00 I   0.00 I   0.00 I   0.00 I 100.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
HOBBIES            I      0 I       9 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      9
                   I   0.00 I    2.59 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   2.59
                   I   0.00 I  100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                   I   0.00 I    3.38 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
MUSIC              I      0 I       5 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      5
                   I   0.00 I    1.44 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   1.44
                   I   0.00 I  100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                   I   0.00 I    1.88 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
TV                 I      0 I      24 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I     24
                   I   0.00 I    6.92 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   6.92
                   I   0.00 I  100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                   I   0.00 I    9.02 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
READING            I      0 I      19 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I     19
                   I   0.00 I    5.48 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   5.48
                   I   0.00 I  100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                   I   0.00 I    7.14 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
REST &  RELAXATN   I      0 I       3 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      3
                   I   0.00 I    0.86 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.86
                   I   0.00 I  100.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                   I   0.00 I    1.13 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-------------------+--------+---------+--------+--------+--------+--------+--------+--------+--------+
TOTAL                     5       266        4        2        1        2        1       50       16      347
                       1.44     76.66     1.15     0.58     0.29     0.58     0.29    14.41     4.61   100.00
```

A table does not appear for a given company situation if no activities were recorded on the sample for that company situation. This will not ordinarily occur with large sample sizes.

The only special feature in this module is the use of the statement:

ACTIVITY = PRIMARY;

which creates a new variable ACTIVITY which is identical to PRIMARY. The same effect could have been achieved using a RENAME statement.

It may be desirable to look at the amount of time spent on activities instead of number of activities. This could have been achieved by adding the statement:

WEIGHT DURATION;

to PROC FREQ, which weights the activities by the length of time spent at them.

Also, instead of using all the values of the variables, one could specify specific values desired using a subsetting IF statement. As an example, if one only wished to consider the case company = alone, then the addition of the statement:

IF COMPANY = 0;

would result in only one table being produced, containing the cases of where the respondent is alone.

Other modifications that can be made to produce variations of the output such as

- combining all company situations into one table, by no longer differentiating by company
- obtaining the table for a subset of the 1975 or 1965 data base
- utilizing a portion of the originally coded activities rather than the formatted 20 activity categories used in this analysis, or
- producing the table for the 1965 data base in such a way that "inside" and "outside" home locations can be differentiated,

are discussed in Section 5.0, or Appendix A, and examples of the output are provided.

4.3.2 Output 2: Mean Duration of Activities

Module 2 produces a table of average duration of activities (in minutes), standard deviation, number of records of such activity and number of persons performing such activities, broken down by location and company. A sample of the output from this module (for a small sample of 9) is provided in Table 4-3.

```
***************
         2
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
* INSERT SELECTION CRITERIA;
  KEEP ACTIVITY LOCATION COMPANY DURATION RESP_NO R_OR_S;
PROC SORT;
  BY COMPANY LOCATION ACTIVITY RESP_NO R_OR_S;
DATA;
  SET;
  BY COMPANY LOCATION ACTIVITY RESP_NO R_OR_S;
  N=0;
  IF LAST.R_OR_S THEN N=N+1;
PROC MEANS NOPRINT MEAN STD N SUM;
  BY COMPANY LOCATION ACTIVITY;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
  BY COMPANY LOCATION;
  FORMAT COMPANY COMPANYC. LOCATION LOCATN.;
  LABEL COMPANY=COMPANY LOCATION=LOCATION;
     TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATI
N;
  ID ACTIVITY;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

The LENGTH statement ensures sufficient space for the values of the ACTIVITY variable (they are given 16 character spaces here). Calculating the number of persons required the addition of an extra DATA step. In the case of the 1965 diary data, there is no R_OR_S variable, so it must be deleted from the KEEP and BY statements, and the variable RESP_NO must be substituted for R_OR_S in the statement:

IF LAST.R_OR_S THEN N = N + 1;

By deleting the LOCATION and COMPANY variables from the KEEP and various BY statements, or replacing them with other variables, you can group the observations in different ways. Examples of this are shown in Section 5.0 and Appendix A.

Table 4-3

Reproduced from best available copy.

```
                1975    HUMAN    ACTIVITIES    PROFILE
      MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATION
------------------------------- COMPANY=ALONE    LOCATION=MISSING DATA ------------------------------------

            ACTIVITY           MINUTES     STD_DEV      NUM_REC      NUM_RESP

          PERSONAL CARE          68.75     65.2399         4             2
          TRAVEL                100.00       .             1             1

---------------------------------- COMPANY=ALONE    LOCATION=HOME ---------------------------------------

         ACTIVITY                  MINUTES      STD_DEV      NUM_REC      NUM_RESP

         CHILD   CARE               45.000                       
         CONVERSATION               24.833         .             1            1
         EATING                     19.925      15.473          12            3
         HOBBIES                    76.444      11.465          40            7
         INDOOR  HOUSEWK            26.884      67.422           9            2
         MUSIC                      63.000      21.915          69            7
         OUTDOOR HOUSEWK            40.600      22.249           5            2
         PERSONAL CARE              20.063      34.085           5            3
         READING                    39.789      26.426          32            6
         REST &  RELAXATN           39.000      31.621          19            7
         SHOPPING                   10.000      31.193           3            2
         SLEEPING                  257.308         .             1            1
         TV                        110.792     189.393          39            7
         WORK                       91.429      69.398          24            5
                                                52.623           7            2

------------------------------ COMPANY=ALONE    LOCATION=AT PLACE OF WORK ----------------------------------

            ACTIVITY     MINUTES     STD_DEV     NUM_REC     NUM_RESP

              WORK          22       9.27362        4            1

------------------------------ COMPANY=ALONE    LOCATION=OTHER'S HOME --------------------------------------

            ACTIVITY     MINUTES     STD_DEV     NUM_REC     NUM_RESP

            SHOPPING        30          .           1            1
            SLEEPING       420          .           1            1
```

The mean duration of activity and its standard deviation is provided for all activities which were performed at any specified locations and with any given company situation. The number of recordings and sample size is also provided in this analysis.

Table 4-3 (Continued)

```
                    1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E

               MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATION

------------------------------------ COMPANY=ALONE   LOCATION=OUTDOOR LEISURE ------------------------------------

                    ACTIVITY          MINUTES     STD_DEV     NUM_REC     NUM_RESP

                  ACTIVE  LEISURE       85           .           1           1

------------------------------------ COMPANY=ALONE   LOCATION=IN      TRANSIT ------------------------------------

                    ACTIVITY    MINUTES     STD_DEV     NUM_REC     NUM_RESP

                     TRAVEL     16.3333     17.3180        39          6
                     WORK        9.8182      4.8953        11          2

----------------------------------- COMPANY=ALONE   LOCATION=OTHER,  PUB.BLD. -----------------------------------

                    ACTIVITY         MINUTES     STD_DEV     NUM_REC     NUM_RESP

                  PERSONAL CARE        30.0         .           1           1
                  SHOPPING             30.5     16.042         14           5
                  SLEEPING            435.0         .           1           1

------------------------------------ COMPANY=WITH CHILDREN   LOCATION=HOME ------------------------------------

                  ACTIVITY             MINUTES     STD_DEV     NUM_REC     NUM_RESP

                  CONVERSATION          44.000     15.0997        3           2
                  EATING                24.778      9.4971        9           3
                  INDOOR   HOUSEWK      44.091     34.7720       11           2
                  OUTDOOR HOUSEWK      297.500     60.1041        2           1
                  PERSONAL CARE         55.000     64.2820        3           2
                  READING               20.667     12.0969        3           2
                  SLEEPING             540.000        .           1           1
                  TV                    79.750     65.8174        8           2

-------------------------------- COMPANY=WITH CHILDREN   LOCATION=OTHER'S HOME --------------------------------

                    ACTIVITY          MINUTES     STD_DEV     NUM_REC     NUM_RESP

                 SOCIAL   ACTIVITY       75          .           1           1

------------------------------ COMPANY=WITH CHILDREN   LOCATION=INDOOR  LEISURE ------------------------------

                  ACTIVITY            MINUTES     STD_DEV     NUM_REC     NUM_RESP

                  EATING               107.5     31.8198        2           2
                  ORGANIZATIONS         85.0         .           1           1
```

Table 4-3 (Continued)

```
                              1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E

                          MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATION

------------------------------- COMPANY=WITH CHILDREN   LOCATION=IN       TRANSIT ------------------------------------

                             ACTIVITY    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                              TRAVEL       15       11.8322       6          3

----------------------------------- COMPANY=FRIENDS & OTHERS   LOCATION=HOME ----------------------------------------

                           ACTIVITY             MINUTES    STD_DEV    NUM_REC    NUM_RESP

                           CONVERSATION            30         .          1           1
                           EATING                  30         0          3           1
                           INDOOR  HOUSEWK         15         .          1           1
                           TV                     210         .          1           1

----------------------------- COMPANY=FRIENDS & OTHERS   LOCATION=IN       TRANSIT ----------------------------------

                             ACTIVITY    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                              TRAVEL       20       17.3205       3          1

----------------------------- COMPANY=FRIENDS & OTHERS   LOCATION=OTHER,  PUB.BLD. --------------------------------

                             ACTIVITY    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                             SHOPPING      50          .          1          1

----------------------------------- COMPANY=SPOUSE & OTHERS   LOCATION=HOME ----------------------------------------

                           ACTIVITY             MINUTES    STD_DEV    NUM_REC    NUM_RESP

                           CHILD   CARE           5.0         .          1           1
                           CONVERSATION          10.0         .          1           1
                           EATING                10.0       0.0000       2           1
                           INDOOR  HOUSEWK       55.0      49.4975       2           1
                           OUTDOOR HOUSEWK       52.5      10.6066       2           1
                           READING               15.0         .          1           1
                           TV                   127.5      31.8198       2           1

----------------------------- COMPANY=SPOUSE & OTHERS   LOCATION=IN       TRANSIT ----------------------------------

                             ACTIVITY    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                              TRAVEL      3.75        1.5         4          1

----------------------------- COMPANY=SPOUSE & OTHERS   LOCATION=OTHER,  PUB.BLD. --------------------------------

                             ACTIVITY      MINUTES    STD_DEV    NUM_REC    NUM_RESP
```

[illegible] (Continued)

```
                    1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E

             MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATION

------------------------------ COMPANY=CHLDREN & OTHERS   LOCATION=OTHER, PUB.BLD. ------------------------------

                        ACTIVITY        MINUTES    STD_DEV    NUM_REC    NUM_RESP

                        ORGANIZATIONS     75          .          1          1
                        SHOPPING           5          .          1          1

-------------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=HOME --------------------------------------

                     ACTIVITY             MINUTES     STD_DEV     NUM_REC     NUM_RESP

                     CONVERSATION          53.333     53.3542        6            2
                     EATING                26.250     22.5000        4            2
                     HOBBIES               30.000        .           1            1
                     INDOOR  HOUSEWK       20.000      9.1924        5            1
                     PERSONAL CARE         20.000     13.2288        3            1
                     READING               22.500     10.6066        2            1
                     REST &  RELAXATN      30.000        .           1            1
                     SLEEPING             450.000        .           1            1
                     SOCIAL  ACTIVITY      65.600     34.6309        5            2

------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=AT PLACE OF WORK -------------------------------

                        ACTIVITY    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                          WORK      34.875     7.84561       8          1

---------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=OTHER'S HOME ----------------------------------

                     ACTIVITY             MINUTES     STD_DEV     NUM_REC     NUM_RESP

                     CHILD   CARE          45.00         .           1            1
                     EATING                30.00      0.00000        4            1
                     PERSONAL CARE        120.00      0.00000        2            1
                     SOCIAL  ACTIVITY      56.75      5.85235        4            2
                     TV                    55.00         .           1            1

------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=RESTAUR-ANT,BAR -------------------------------

                     ACTIVITY             MINUTES     STD_DEV     NUM_REC     NUM_RESP

                     EATING                  93          .           1            1
                     SOCIAL  ACTIVITY        92          .           1            1
                     WORK                    35          0           2            1

------------------------------ COMPANY=ALONE W/ OTHERS   LOCATION=INDOOR  LEISURE ------------------------------

                      ACTIVITY          MINUTES     STD_DEV     NUM_REC     NUM_RESP

                      CONVERSATION        17.5      3.53553        2           1
                      ORGANIZATIONS       35.0      7.07107        2           1
```

Table 4-3 (Concluded)

```
                               1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E
                              MEAN DURATION OF ACTIVITIES CONTROLLING FOR COMPANY AND LOCATION
-------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=OUTDOOR LEISURE --------------------------------
                         ACTIVITY          MINUTES     STD_DEV     NUM_REC     NUM_RESP

                       ACTIVE  LEISURE       95           .           1           1
                       CONVERSATION          30           .           1           1

-------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=IN      TRANSIT --------------------------------
                         ACTIVITY    MINUTES     STD_DEV     NUM_REC     NUM_RESP

                          TRAVEL     12.3478     13.1239       23           3
                          WORK       28.3333     20.2073        3           1

-------------------------------- COMPANY=ALONE W/ OTHERS   LOCATION=OTHER, PUB.BLD. --------------------------------
                        ACTIVITY          MINUTES     STD_DEV     NUM_REC     NUM_RESP

                        CONVERSATION       30.00         .           1           1
                        ORGANIZATIONS      63.50     12.0208         2           1
                        SHOPPING           51.75     36.4839         8           4
```

4.3.3 Output 3: Average Time at Location

Module 3 is essentially the same as 2 except that mean duration is calculated for location, and broken down into groups by activity and company. This merely requires interchanging the order of the ACTIVITY and LOCATION variables in the various BY statements. The output from this module is provided in Table 4-4.

```
****************
       3
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE2.DIARY;←——
  BY RESP_NO;
  ACTIVITY = PUT(PRIMARY,ACTIV2_.);←——
* INSERT SELECTION CRITERIA;
  KEEP ACTIVITY LOCATION COMPANY DURATION RESP_NO; ←——
PROC SORT;
  BY COMPANY ACTIVITY LOCATION RESP_NO;  ←——
DATA;
  SET;
  BY COMPANY ACTIVITY LOCATION RESP_NO;  ←——
  N=0;
  IF LAST.RESP_NO THEN N=N+1;
PROC MEANS NOPRINT MEAN STD N;
  BY COMPANY ACTIVITY LOCATION;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES STD=STD_DEV N=NUM_REC SUM=SUMTIME NUM_RESP;
PROC PRINT;
  BY COMPANY ACTIVITY;
  FORMAT COMPANY COMPANYC. LOCATION LOCATN.;
  LABEL COMPANY=COMPANY LOCATION=LOCATION;
     TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 AVERAGE TIME AT LOCATION CONTROLLING FOR COMPANY AND ACTIVITY;
  ID LOCATION;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

In this example, modifications were made (in lines indicated by an arrow) appropriate to using the 1965 diary data.

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Table 4-4

```
                         1 9 6 5   H U M A N   A C T I V I T I E S   P R O F I L E
                      AVERAGE TIME AT LOCATION CONTROLLING FOR COMPANY AND ACTIVITY

------------------------------------ COMPANY=ALONE   ACTIVITY=ACTIVE  LEISURE ------------------------------------

                        LOCATION          MINUTES    STD_DEV    NUM_REC    NUM_RESP

                     OUTDOOR LEISURE        85          .          1           1

------------------------------------ COMPANY=ALONE   ACTIVITY=CHILD  CARE ------------------------------------

                        LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                          HOME     [illegible]    .          1          1

------------------------------------ COMPANY=ALONE   ACTIVITY=CONVERSATION ------------------------------------

                        LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                          HOME     24.8333    15.4733      12          3

------------------------------------ COMPANY=ALONE   ACTIVITY=EATING ------------------------------------

                     LOCATION              MINUTES    STD_DEV    NUM_REC    NUM_RESP

                     HOME                   19.925    11.4654      40           7
                     RESTAURANT,BAR         45.000       .          1           1
                     INDOOR  LEISURE       101.000       .          1           1

------------------------------------ COMPANY=ALONE   ACTIVITY=HOBBIES ------------------------------------

                        LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                          HOME     76.4444    67.4224       9          2

------------------------------------ COMPANY=ALONE   ACTIVITY=INDOOR  HOUSEWK ------------------------------------

                        LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                          HOME     26.8441    21.9153      69          7
```

The average time spent at each location while alone is provided for each specified activity. The standard deviation, number of recordings and sample size is also presented for each situation. The remainder of the output for the other company situations produced by this module has not been included here.

Table 4-4 (Concluded)

```
                  AVERAGE TIME AT LOCATION CONTROLLING FOR COMPANY AND ACTIVITY

---------------------------------------- COMPANY=ALONE   ACTIVITY=OUTDOOR HOUSEKR ----------------------------------------

                    LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                      HOME       40.6      34.0852       5           5

---------------------------------------- COMPANY=ALONE   ACTIVITY=PERSONAL CARE ----------------------------------------

                 LOCATION              MINUTES     STD_DEV    NUM_REC    NUM_RESP

                 MISSING DATA          68.7500     65.2599       4          2
                 HOME                  20.0625     26.4257      32          6
                 OTHER,  PUB.BLD.      30.0000       .           1          1

---------------------------------------- COMPANY=ALONE   ACTIVITY=READING ----------------------------------------

                    LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                      HOME      39.7895    31.6275      19          7

---------------------------------------- COMPANY=ALONE   ACTIVITY=REST & RELAXATN ----------------------------------------

                    LOCATION    MINUTES    STD_DEV    NUM_REC    NUM_RESP

                      HOME        39       31.1929       5          2

---------------------------------------- COMPANY=ALONE   ACTIVITY=SHOPPING ----------------------------------------

                 LOCATION              MINUTES     STD_DEV    NUM_REC    NUM_RESP

                 HOME                   10.0         .           1          1
                 OTHER'S HOME           30.0         .           1          1
                 OTHER,  PUB.BLD.       30.5       16.042       14          5

---------------------------------------- COMPANY=ALONE   ACTIVITY=SLEEPING ----------------------------------------

                 LOCATION              MINUTES     STD_DEV    NUM_REC    NUM_RESP

                 HOME                  257.508     189.393      39          7
                 OTHER'S HOME          420.000       .           1          1
                 OTHER,  PUB.BLD.      435.000       .           1          1

---------------------------------------- COMPANY=ALONE   ACTIVITY=TRAVEL ----------------------------------------

                 LOCATION              MINUTES     STD_DEV    NUM_REC    NUM_RESP

                 MISSING DATA          100.000       .           1          1
                 IN      TRANSIT       [illegible] [illegible] [illegible] [illegible]
```

4.3.4 Output 4: Percent of People Performing Activity During Each Time Period

Module 4 produces frequency tables of activities performed for each hour interval. This is done in two steps. First DATA TICKTOC creates a new data set with a record for each hour interval of each day. Then PROC FREQ outputs the data in the desired format. The output from this module is shown in Table 4-5.

TIME5 is not one of the formats contained in SASLIB; however, it is one of a number of permanent SAS formats that can be used. It converts minutes to the form hours:minutes (e.g., 11:30). For other SAS formats, the reader is referred to the SAS User's Guide.[1]

```
****************
      4
***************;
DATA TICKTOC;
      SET SASFILE.DIARY;
* INSERT SELECTION CRITERIA;
      KEEP ACTIVITY TIME;
      LENGTH PRIMARY 3 TIME 4;
      ACTIVITY=PRIMARY;
      LABEL TIME='(OF DAY)';
      START=60*(INT(TBEGN/60)+1);
      END=60*INT(TEND/60);
      IF END GE START THEN DO TIC=START TO END BY 60;
         TIME = 60*TIC; OUTPUT; END;
PROC FREQ;
      FORMAT TIME TIME5. ACTIVITY ACTIV.;
      LABEL ACTIVITY=(PRIMARY);
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD;
      TABLES ACTIVITY*TIME/NOROW NOPERCENT NOFREQ;
```

The length of the interval treated can be altered by substituting the desired length (in minutes) for the 60 used in each of the following statements:

START = 60 x (INT(TBEGN/60) + 1);
END = 60 x INT(TEND)/60);
IF END GE START THEN DO TIC = START TO END BY 60;

These statements create a record for each 60 minute slice of time.

Table 4-5

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1975 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD*

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	TOTAL
WORK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INDOOR HOUSEWK	0.00	0.00	0.00	0.00	0.00	0.00	4.76	19.05	
OUTDOOR HOUSEWK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
CONVERSATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76	
TRAVEL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHOPPING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PERSONAL CARE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76	
EATING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.05	
SLEEPING	100.00	100.00	100.00	100.00	100.00	100.00	80.95	42.86	
ORGANIZATIONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SOCIAL ACTIVITY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ACTIVE LEISURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HOBBIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MUSIC	0.00	0.00	0.00	0.00	0.00	0.00	4.76	0.00	
TV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76	
READING	0.00	0.00	0.00	0.00	0.00	0.00	9.52	4.76	
REST & RELAXATN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	21	21	21	21	21	21	21	21	504

(CONTINUED)

The percent of respondents performing each activity during each 1 hour time period is given in each cell. The total number of recordings from the 9 respondents over the 4 days is provided at the bottom of each column; however, the overall total (504) has no significance. This analysis can be presented for any time interval.

Table 4-5 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	TOTAL
WORK	4.76	14.29	14.29	9.52	9.52	9.52	4.76	4.76	
INDOOR HOUSEWK	19.05	9.52	9.52	28.57	9.52	9.52	4.76	4.76	
OUTDOOR HOUSEWK	0.00	4.76	4.76	4.76	9.52	4.76	9.52	4.76	
CONVERSATION	0.00	9.52	4.76	0.00	0.00	0.00	4.76	9.52	
TRAVEL	0.00	9.52	9.52	0.00	4.76	14.29	9.52	14.29	
SHOPPING	0.00	9.52	4.76	14.29	14.29	19.05	4.76	0.00	
PERSONAL CARE	4.76	14.29	4.76	4.76	4.76	0.00	9.52	14.29	
EATING	19.05	0.00	0.00	4.76	14.29	4.76	0.00	9.52	
SLEEPING	19.05	4.76	9.52	9.52	4.76	4.76	4.76	0.00	
ORGANIZATIONS	4.76	9.52	9.52	4.76	4.76	4.76	9.52	0.00	
SOCIAL ACTIVITY	4.76	0.00	0.00	0.00	0.00	0.00	9.52	4.76	
ACTIVE LEISURE	4.76	4.76	4.76	4.76	0.00	0.00	0.00	0.00	
HOBBIES	0.00	0.00	0.00	0.00	4.76	4.76	9.52	9.52	
MUSIC	4.76	0.00	4.76	4.76	0.00	0.00	0.00	0.00	
TV	9.52	4.76	9.52	4.76	19.05	23.81	19.05	19.05	
READING	4.76	4.76	9.52	4.76	0.00	0.00	0.00	0.00	
REST & RELAXATN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76	
TOTAL	21	21	21	21	21	21	21	21	504

Table 4-5 (Concluded)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	TOTAL
WORK	4.76	4.76	4.76	9.52	9.52	4.76	0.00	0.00	
INDOOR HOUSEWK	4.76	33.33	9.52	9.52	0.00	0.00	0.00	0.00	
OUTDOOR HOUSEWK	9.52	4.76	9.52	4.76	0.00	0.00	0.00	0.00	
CONVERSATION	4.76	4.76	4.76	4.76	0.00	9.52	0.00	9.52	
TRAVEL	9.52	4.76	4.76	4.76	4.76	0.00	9.52	0.00	
SHOPPING	0.00	4.76	0.00	0.00	0.00	0.00	0.00	0.00	
PERSONAL CARE	14.29	4.76	4.76	0.00	0.00	4.76	0.00	0.00	
EATING	4.76	19.05	19.05	0.00	14.29	14.29	4.76	0.00	
SLEEPING	0.00	0.00	0.00	9.52	19.05	19.05	42.86	61.90	
ORGANIZATIONS	0.00	0.00	0.00	4.76	0.00	0.00	0.00	0.00	
SOCIAL ACTIVITY	0.00	0.00	4.76	14.29	9.52	4.76	4.76	4.76	
ACTIVE LEISURE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HOBBIES	19.05	4.76	0.00	9.52	0.00	0.00	0.00	0.00	
MUSIC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.76	
TV	19.05	9.52	33.33	23.81	38.10	42.86	23.81	9.52	
READING	4.76	0.00	4.76	0.00	0.00	0.00	14.29	9.52	
REST & RELAXATN	4.76	4.76	0.00	4.76	4.76	0.00	0.00	0.00	
TOTAL	21	21	21	21	21	21	21	21	504

4.3.5 Output 5: Percent of Time Secondary Activity Occurs with Primary Activity

Module 5 produces a frequency table of primary activity versus secondary activity in a straightforward application of PROC FREQ. See Table 4-6 for the output from this module.

```
****************
      5
****************;
DATA;
      SET SASFILE.DIARY;
* INSERT SELECTION CRITERIA;
      KEEP PRIMARY SECNDARY;
PROC FREQ;
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY;
      FORMAT PRIMARY SECNDARY ACTIV.;
      TABLES PRIMARY*SECNDARY/NOPERCENT;
```

4.3.6 Output 6: Percent of Time Activities Occurred Before/After Another Activity

Module 6 produces a frequency table of what activity occurred before and after another activity. This again is an application of PROC FREQ, requiring only the creation of the variables BEFORE and AFTER, which provide the activities performed before and after the present one. The RETURN statement causes the computer to go on to the next observation, skipping subsequent statements (and is, in this case, superfluous). See Table 4-7 for the output from this format.

```
****************
    6
****************;
DATA;
      SET SASFILE.DIARY;
      BY RESP_NO;
* INSERT SELECTION CRITERIA;
      KEEP BEFORE AFTER;
      RETAIN BEFORE;
      IF FIRST.RESP_NO THEN BEFORE=.;
      AFTER=PRIMARY;
      IF AFTER=BEFORE THEN DELETE;
      IF BEFORE NE . THEN OUTPUT;
      BEFORE=AFTER; RETURN;
* SELECT DESIRED ACTIVITIES;
PROC FREQ;
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY;
      TABLES BEFORE*AFTER/NOPERCENT;
      LABEL BEFORE=ACTIVITY AFTER=ACTIVITY;
      FORMAT BEFORE AFTER ACTIV.;
```

Table 4-6

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

TABLE OF PRIMARY BY SECNDARY

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PRIMARY ACTIVITY SECONDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	NONE	INDOOR HOUSEWK	CHILD CARE	CONVERSATION	PERSONAL CARE	EATING	SOCIAL ACTIVITY	HOBBIES	MUSIC	TV	READING	TOTAL
WORK	29 82.86 7.49	0 0.00 0.00	0 0.00 0.00	4 11.43 5.97	0 0.30 0.00	1 2.86 25.00	0 0.30 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.86 8.33	35
TRAVEL	45 59.21 11.63	0 0.00 0.00	0 0.00 0.00	21 27.63 31.34	3 3.95 33.33	0 0.00 0.00	0 0.30 0.00	0 0.00 0.00	7 9.21 35.00	0 0.00 0.00	0 0.00 0.00	76
INDOOR HOUSEWK	69 78.41 17.83	2 2.27 100.00	1 1.14 100.00	6 6.82 8.96	1 1.14 11.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	6 6.82 30.00	2 2.27 22.22	1 1.14 8.33	88
OUTDOOR HOUSEWK	9 100.00 2.33	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	9
CHILD CARE	3 75.00 0.78	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 25.00 11.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4
CONVERSATION	23 85.19 5.94	0 0.00 0.00	0 0.00 0.00	4 14.81 5.97	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	27
SHOPPING	18 69.23 4.65	0 0.00 0.00	0 0.00 0.00	7 26.92 10.45	1 3.85 11.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	26
PERSONAL CARE	38 84.44 9.82	0 0.00 0.00	0 0.00 0.00	3 6.67 4.48	1 2.22 11.11	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.44 10.00	1 2.22 11.11	0 0.00 0.00	45
EATING	41 61.19 10.59	0 0.00 0.00	0 0.00 0.00	11 16.42 16.42	1 1.49 11.11	0 0.00 0.00	2 2.99 28.57	0 0.00 0.00	4 5.97 20.00	2 2.99 22.22	6 8.96 50.00	67
(CONTINUED) TOTAL	387	2	1	67	9	4	7	2	20	9	12	520

*The top line (frequency) in each cell provides the number of times each secondary activity (horizontal axis) was performed with a primary activity (vertical axis). The second line (row percent) provides the percent of times, for a given primary activity, the secondary activity was performed. The last line (column percent) provides the percent of times, for a given secondary activity, the primary activity was performed.

Table 4-6 (Concluded)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

TABLE OF PRIMARY BY SECONDARY

PRIMARY ACTIVITY SECONDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	NONE	INDOOR HOUSEWK	CHILD CARE	CONVERSATION	PERSONAL CARE	EATING	SOCIAL ACTIVITY	HOBBIES	MUSIC	TV	READING	TOTAL
SLEEPING	40 93.02 10.34	0 0.00 0.00	0 0.00 0.00	1 2.33 1.49	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 4.65 22.22	0 0.00 0.00	43
ORGANIZATIONS	7 100.00 1.81	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7
SOCIAL ACTIVITY	4 36.36 1.03	0 0.00 0.00	0 0.00 0.00	1 9.09 1.49	0 0.00 0.00	0 0.00 0.00	5 45.45 71.43	0 0.00 0.00	0 0.00 0.00	1 9.09 11.11	0 0.00 0.00	11
ACTIVE LEISURE	1 50.00 0.26	0 0.00 0.00	0 0.00 0.00	1 50.00 1.49	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2
HOBBIES	6 60.00 1.55	0 0.00 0.00	0 0.00 0.00	2 20.00 2.99	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 10.00 5.00	1 10.00 11.11	0 0.00 0.00	10
MUSIC	5 100.00 1.29	0 0.00 0.00	0 0.00 0.30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	5
TV	29 80.56 7.49	0 0.00 0.00	0 0.00 0.00	1 2.78 1.49	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 5.56 100.00	0 0.00 0.00	0 0.00 0.00	4 11.11 33.33	36
READING	17 68.00 4.39	0 0.00 0.00	0 0.00 0.00	4 16.00 5.97	1 4.00 11.11	3 12.00 75.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	25
REST & RELAXATV	3 75.00 0.78	0 0.00 0.00	0 0.00 0.00	1 25.00 1.49	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4
TOTAL	387	2	1	67	9	4	7	2	20	9	12	520

The row totals indicate the number of times an activity was recorded as a primary activity and the column totals indicate the number of times an activity was recorded as a secondary activity.

Table 4-7

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

TABLE OF BEFORE BY AFTER

BEFORE ACTIVITY AFTER ACTIVITY

FREQUENCY ROW PCT COL PCT	WORK	TRAVEL	INDOOR HOUSEWK	OUTDOOR HOUSEWK	CHILD CARE	CONVERSATION	SHOPPING	PERSONAL CARE	EATING	TOTAL
WORK	0 0.00 0.00	2 20.00 2.78	4 40.00 4.71	0 0.00 0.00	0 0.00 0.00	1 10.00 3.70	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	10
TRAVEL	0 0.00 0.00	2 2.78 2.78	10 13.89 11.76	2 2.78 25.00	1 1.39 25.00	2 2.78 7.41	23 31.94 88.46	2 2.78 4.55	8 11.11 12.90	72
INDOOR HOUSEWK	4 4.71 40.00	6 7.06 8.33	17 20.00 20.00	1 1.18 12.50	1 1.18 25.00	6 7.06 22.22	0 0.00 0.00	6 7.06 13.64	30 35.29 48.39	85
OUTDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	3 37.50 3.53	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 25.00 3.23	8
CHILD CARE	0 0.00 0.00	4 100.00 5.56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4
CONVERSATION	1 3.70 10.00	9 33.33 12.50	2 7.41 2.35	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 7.41 4.55	3 11.11 4.84	27
SHOPPING	1 3.85 10.00	22 84.62 30.56	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.85 3.70	1 3.85 3.85	0 0.00 0.00	0 0.00 0.00	26
PERSONAL CARE	1 2.33 10.00	7 16.28 9.72	10 23.26 11.76	0 0.00 0.00	1 2.33 25.00	3 6.98 11.11	0 0.00 0.00	2 4.65 4.55	7 16.28 11.29	43
EATING	3 4.84 30.00	6 9.68 8.33	13 20.97 15.29	4 6.45 50.00	0 0.00 0.00	3 4.84 11.11	0 0.00 0.00	7 11.29 15.91	0 0.00 0.00	62
TOTAL	10	72	85	8	4	27	26	44	62	463

(CONTINUED)

*The top line (frequency) in each cell indicates the number of times the activity in the vertical axis occurred before the activity in the horizontal axis. The second line (row percent) is, for a given activity in the vertical axis, the percent of time that it is followed by the activity in the horizontal axis. The bottom line (column percent) in each block is, for a given activity in the horizontal axis, the percent of times it is preceded by the activity in the vertical axis. The total provides the total number of times each activity was recorded.

Table 4-7 (Continued)

```
                PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

                                     TABLE OF BEFORE BY AFTER

BEFORE     ACTIVITY   AFTER      ACTIVITY

FREQUENCY       |
 ROW PCT        |
 COL PCT        |SLEEPING|ORGANIZA|SOCIAL  |ACTIVE  |HOBBIES |MUSIC   |TV      |READING |REST &  |
                |        |TIONS   |ACTIVITY|LEISURE |        |        |        |        |RELAXATN|  TOTAL
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
WORK            |      0 |      0 |      0 |      1 |      0 |      0 |      1 |      1 |      0 |     10
                |   0.00 |   0.00 |   0.00 |  10.00 |   0.00 |   0.00 |  10.00 |  10.00 |   0.00 |
                |   0.00 |   0.00 |   0.00 |  50.00 |   0.00 |   0.00 |   2.78 |   4.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TRAVEL          |      1 |      5 |      4 |      1 |      1 |      0 |      9 |      1 |      0 |     72
                |   1.39 |   6.94 |   5.56 |   1.39 |   1.39 |   0.00 |  12.50 |   1.39 |   0.00 |
                |   3.85 |  71.43 |  40.00 |  50.00 |  10.00 |   0.00 |  25.00 |   4.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
INDOOR  HOUSEWK |      2 |      0 |      0 |      0 |      2 |      0 |      7 |      2 |      1 |     85
                |   2.35 |   0.00 |   0.00 |   0.00 |   2.35 |   0.00 |   8.24 |   2.35 |   1.18 |
                |   7.69 |   0.00 |   0.00 |   0.00 |  20.00 |   0.00 |  19.44 |   8.00 |  25.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
OUTDOOR HOUSEWK |      0 |      0 |      0 |      0 |      1 |      0 |      2 |      0 |      0 |      8
                |   0.00 |   0.00 |   0.00 |   0.00 |  12.50 |   0.00 |  25.00 |   0.00 |   0.00 |
                |   0.00 |   0.00 |   0.00 |   0.00 |  10.00 |   0.00 |   5.56 |   0.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
CHILD   CARE    |      0 |      0 |      0 |      0 |      0 |      0 |      0 |      0 |      0 |      4
                |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
                |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
CONVERSATION    |      3 |      1 |      0 |      0 |      0 |      0 |      3 |      2 |      1 |     27
                |  11.11 |   3.70 |   0.00 |   0.00 |   0.00 |   0.00 |  11.11 |   7.41 |   3.70 |
                |  11.54 |  14.29 |   0.00 |   0.00 |   0.00 |   0.00 |   8.33 |   8.00 |  25.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SHOPPING        |      0 |      0 |      0 |      0 |      0 |      0 |      0 |      1 |      0 |     26
                |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   3.85 |   0.00 |
                |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   0.00 |   4.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
PERSONAL CARE   |      5 |      0 |      0 |      0 |      0 |      1 |      1 |      5 |      0 |     43
                |  11.63 |   0.00 |   0.00 |   0.00 |   0.00 |   2.33 |   2.33 |  11.63 |   0.00 |
                |  19.23 |   0.00 |   0.00 |   0.00 |   0.00 |  20.00 |   2.78 |  20.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
EATING          |      2 |      1 |      5 |      0 |      2 |      2 |      8 |      6 |      0 |     62
                |   3.23 |   1.61 |   8.06 |   0.00 |   3.23 |   3.23 |  12.90 |   9.68 |   0.00 |
                |   7.69 |  14.29 |  50.00 |   0.00 |  20.00 |  40.00 |  22.22 |  24.00 |   0.00 |
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TOTAL                 26        7       10        2       10        5       36       25        4      463

(CONTINUED)
```

Table 4-7 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

TABLE OF BEFORE BY AFTER

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BEFORE ACTIVITY AFTER ACTIVITY

FREQUENCY ROW PCT COL PCT	WORK	TRAVEL	INDOOR HOUSEWK	OUTDOOR HOUSEWK	CHILD CARE	CONVERSATION	SHOPPING	PERSONAL CARE	EATING	TOTAL
SLEEPING	0 0.00 0.00	0 0.00 0.00	9 30.00 10.59	0 0.00 0.00	0 0.00 0.00	2 6.67 7.41	0 0.00 0.00	11 36.67 25.00	6 20.00 9.68	30
ORGANIZATIONS	0 0.00 0.00	5 71.43 6.94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 28.57 7.41	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	7
SOCIAL ACTIVITY	0 0.00 0.00	4 44.44 5.56	0 0.00 0.00	0 0.00 0.00	1 11.11 25.00	0 0.00 0.00	0 0.00 0.00	1 11.11 2.27	0 0.00 0.00	9
ACTIVE LEISURE	0 0.00 0.00	2 100.00 2.78	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2
HOBBIES	0 0.00 0.00	0 0.00 0.00	2 20.00 2.35	0 0.00 0.00	0 0.00 0.00	4 40.00 14.81	1 10.00 3.85	2 20.00 4.55	0 0.00 0.00	10
MUSIC	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 25.00 2.27	1 25.00 1.61	4
TV	0 0.00 0.00	2 5.71 2.78	10 28.57 11.76	1 2.86 12.50	0 0.00 0.00	2 5.71 7.41	0 0.00 0.00	5 14.29 11.36	2 5.71 3.23	35
READING	0 0.00 0.00	1 4.00 1.39	4 16.00 4.71	0 0.00 0.00	0 0.00 0.00	1 4.00 3.70	1 4.00 3.85	4 16.00 9.09	2 8.00 3.23	25
REST & RELAXATN	0 0.00 0.00	0 0.00 0.00	1 25.00 1.18	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 25.00 2.27	1 25.00 1.61	4
TOTAL	10	72	85	8	4	27	26	44	62	463

(CONTINUED)

Table 4-7 (Concluded)

```
                         1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E

                    PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

                                       TABLE OF BEFORE BY AFTER

BEFORE     ACTIVITY   AFTER     ACTIVITY

FREQUENCY         I
 ROW PCT          I
 COL PCT          ISLEEPINGIORGANIZAISOCIAL   IACTIVE   IHOBBIES  IMUSIC    ITV       IREADING  IREST &  I  TOTAL
                  I        ITIONS   IACTIVITYILEISURE I         I         I         I         IRELAXATNI
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SLEEPING          I      0 I      0 I      0 I      0 I      0 I      1 I      0 I      1 I      0 I     30
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   3.33 I   0.00 I   3.33 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  20.00 I   0.00 I   4.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
ORGANIZATIONS     I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      7
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SOCIAL  ACTIVITY  I      0 I      0 I      0 I      0 I      1 I      0 I      2 I      0 I      0 I      9
                  I   0.00 I   0.00 I   0.00 I   0.00 I  11.11 I   0.00 I  22.22 I   0.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I  10.00 I   0.00 I   5.56 I   0.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
ACTIVE  LEISURE   I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      0 I      2
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
HOBBIES           I      0 I      0 I      0 I      0 I      0 I      0 I      1 I      0 I      0 I     10
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  10.00 I   0.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   2.78 I   0.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
MUSIC             I      0 I      0 I      0 I      0 I      0 I      0 I      1 I      1 I      0 I      4
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  25.00 I  25.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   2.78 I   4.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TV                I      9 I      0 I      0 I      0 I      2 I      0 I      0 I      2 I      0 I     35
                  I  25.71 I   0.00 I   0.00 I   0.00 I   5.71 I   0.00 I   0.00 I   5.71 I   0.00 I
                  I  34.62 I   0.00 I   0.00 I   0.00 I  20.00 I   0.00 I   0.00 I   8.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
READING           I      4 I      0 I      1 I      0 I      1 I      1 I      0 I      3 I      2 I     25
                  I  16.00 I   0.00 I   4.00 I   0.00 I   4.00 I   4.00 I   0.00 I  12.00 I   8.00 I
                  I  15.38 I   0.00 I  10.00 I   0.00 I  10.00 I  20.00 I   0.00 I  12.00 I  50.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
REST &  RELAXAIN  I      0 I      0 I      0 I      0 I      0 I      0 I      1 I      0 I      0 I      4
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I  25.00 I   0.00 I   0.00 I
                  I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   2.78 I   0.00 I   0.00 I
------------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TOTAL                    26        7       10        2       10        5       36       25        4    463
```

5.0 UTILIZING THE PROGRAM

To aid the prospective user, two sample programs have been run which demonstrate some additional uses of the program. Program I produced the six forms of output, each of which contains variations from those illustrated in Section 4.3. Program 2 produced four of the output forms which contain modifications that are somewhat more complicated than those provided in Program I. The tables produced by these programs can be found at the end of each section.

5.1 Program I

The data cards to be input for Program I are presented in Figure 5-I at the end of this section, followed by the tables produced by this program. They should be referred to during the following discussion.

The first program uses the JCL statements to call SASFILE, SASFILE 2 and SASLIB from disk. The SAS portion of the program begins with the statement

```
OPTIONS NODATE NONUMBER;
```

which deletes the date and page number which normally appear at the top of each printout page. The statement

```
PROC CONTENTS DATA=SASFILE._ALL_;
```

causes a printout of information on all the data sets in SASFILE, i.e., both DIARY and BACKGRND (this output is found in Section 2.2, Tables 2-2 to 2-5). Following the PROC CONTENTS statement on the Program I printout is a listing of the input cards for each module used to produce the sample tables.

Example for Module I

Module I uses the 1975 data (respondents, first day only). This is achieved by adding a subsetting IF statement,

```
IF R_OR_S = 'R' AND DAY = I;
```

which selects out the proper observations. It was decided not to separate the data into separate tables by company and this is achieved by deleting the variable COMPANY from the TABLES statement. Note the changed TITLE3 statement which indicates the new situation. An extra DATA step has been added to calculate and print out the sample size. The output created from this module is provided in Table 5-I, preceded by the sample size printout (Figure 5-2).

```
//EPAJIG   JOB (S2KC,MBZS),DOUGLAS,PRTY=5,MSGLEVEL=(1,1),TIME=50
/*PASSWORD      XXX
//FM1 EXEC SAS9,PRINT=A
//SASFILE DD UNIT=3330-1,VOL=SER=USER80,DSN=CN.EPAJIG.S2KC.DATA1975,
// DISP=OLD
//SASFILE2 DD UNIT=3330-1,VOL=SER=USER60,DSN=CN.EPAJIG.S2KC.DATA1965,
// DISP=OLD
//SASLIB DD DSN=CN.EPAJIG.S2KC.FMTLIB,
//  UNIT=3330-1,VOL=SER=USER79,
// DISP=OLD
OPTIONS NODATE NONUMBER;
PROC CONTENTS DATA=SASFILE._ALL_;
******************
         1
****************;
DATA WORK1;
      SET SASFILE.DIARY;
      ACTIVITY=PRIMARY;
* INSERT SELECTION CRITERIA;
      IF R_OR_S='R' AND DAY=1;
      KEEP LOCATION ACTIVITY RESP_NO R_OR_S DAY_WEEK;
DATA;
  SET WORK1 END=EOF;
      BY RESP_NO;
  IF LAST.RESP_NO;
  N+1;
  IF R_OR_S='S' THEN N=N+1;
  IF EOF THEN DO;
   FILE PRINT;
   PUT / @20 'NUMBER OF PERSONS IN SAMPLE' @50 N;
   END;
PROC FREQ DATA=WORK1;
      TABLES  CTIVITY*LOCATION;
      FORMAT LOCATION LOCATN. ACTIVITY ACTIV.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 PERCENT OF ACTIVITIES AT EACH LOCATION;
***************
          2
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
* INSERT SELECTION CRITERIA;
  KEEP ACTIVITY DURATION RESP_NO R_OR_S;
PROC SORT;
  BY ACTIVITY RESP_NO R_OR_S;
DATA;
  SET;
  BY ACTIVITY RESP_NO R_OR_S;
  N=0;
  IF LAST.R_OR_S THEN N=N+1;
```

Figure 5-1. Program 1 Input

```
PROC MEANS NOPRINT MEAN STD N SUM;
   BY ACTIVITY;
   VAR DURATION N;
   OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
   FORMAT COMPANY COMPANYC. LOCATION LOCATN.;
       TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
   TITLE3 MEAN DURATION OF ACTIVITIES;
   ID ACTIVITY;
   VAR MINUTES STD_DEV NUM_REC NUM_RESP;

***************
        3
**************;
DATA ;
   LENGTH ACTIVITY $16;
   MERGE SASFILE2.DIARY SASFILE2.BACKGRND;
   BY RESP_NO;
   ACTIVITY=PUT(PRIMARY,ACTIV2_.);
* INSERT SELECTION CRITERIA;
   IF LOCATION=7 OR LOCATION=8 OR (LOCATION=3 AND (OCC_BRCH=0 OR OCC_BRCH
=3)) OR LOCATION=2;
   KEEP LOCATION DURATION RESP_NO;
PROC SORT;
   BY LOCATION RESP_NO;
DATA;
   SET;
   BY LOCATION RESP_NO;
   N=0;
   IF LAST.RESP_NO THEN N=N+1;
PROC FORMAT;
VALUES LOCATNA
2= OUTSIDE HOME
3=AT PLACE OF WORK
7=OUTDOOR LEISURE
8=IN       TRANSIT;
PROC MEANS NOPRINT MEAN STD N;
   BY LOCATION;
   VAR DURATION N;
   OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
   FORMAT LOCATION LOCATNA.;
   LABEL COMPANY=COMPANY LOCATION=LOCATION;
       TITLE 1 9 6 5   H U M A N   A C T I V I T I E S   P R O F I L E;
   TITLE3 AVERAGE TIME AT LOCATION OUT OF DOORS;
   ID LOCATION;
   VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

Figure 5-1. (Continued)

```
***************;
DATA TICKTOC;
      SET SASFILE2.DIARY;
      LENGTH PRIMARY 3 TIME 4;
      LABEL TIME='(OF DAY)';
* INSERT SELECTION CRITERIA;
      ACTIVITY=PRIMARY;
      START=30*(INT(TBEGN/30)+1);
      END=30*INT(TEND/30);
      IF END GE START THEN DO TIC=START TO END BY 30;
         TIME = 60*TIC; OUTPUT; END;
      KEEP ACTIVITY TIME;
PROC FREQ;
      TABLES ACTIVITY*TIME/NOROW NOPERCENT NOFREQ;
      FORMAT TIME TIME5.  ACTIVITY ACTIV2_.;
      LABEL ACTIVITY=(PRIMARY);
      TITLE 1 9 6 5   H U M A N   A C T I V I T I E S   P R O F I L E;
TITLE3 PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD;
***************
      5
***************;
DATA;
      SET SASFILE.DIARY;
* INSERT SELECTION CRITERIA;
      IF PRIMARY=963 OR PRIMARY=239 OR SECNDARY=963 OR SECNDARY=239;
      KEEP PRIMARY SECNDARY;
PROC FREQ;
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY;
TITLE5 ACTIVITIES OCCURING WITH CONVERSATION ONLY;
      FORMAT PRIMARY SECNDARY ACTIV.;
      TABLES PRIMARY*SECNDARY/NOPERCENT;
***************
     6
***************;
DATA;
      MERGE SASFILE.DIARY  SASFILE.BACKGRND;
      BY RESP_NO;
* INSERT SELECTION CRITERIA;
      IF SEX_OF_R=1 AND MARITLST=1 ;
      KEEP BEFORE AFTER;
      RETAIN BEFORE;
      IF FIRST.RESP_NO THEN BEFORE=.;
      AFTER=PRIMARY;
      IF AFTER=BEFORE THEN DELETE;
      IF BEFORE NE . THEN OUTPUT;
      BEFORE=AFTER; RETURN;
PROC FREQ;
      TABLES BEFORE*AFTER/NOPERCENT;
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY;
TITLE5 FOR SINGLE MEN ONLY;
      LABEL BEFORE=ACTIVITY AFTER=ACTIVITY;
      FORMAT BEFORE AFTER ACTIV.;
```

Figure 5-1 (Concluded)

```
                    S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
NUMBER OF PERSONS IN SAMPLE    1424
```

Figure 5-2. Sample Size Printout for Table 5-1 "Percent of Activities at Each Location"

Table 5-1

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF ACTIVITIES AT EACH LOCATION

TABLE OF ACTIVITY BY LOCATION

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ACTIVITY   LOCATION (OF ACTIVITY)

FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAURANT,BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, PUB.BLD.	TOTAL
NONE *	1	0	0	0	0	0	0	0	0	1
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WORK	4	190	1913	8	6	2	0	163	30	2316
	0.01	0.60	6.00	0.03	0.02	0.01	0.00	0.51	0.09	7.26
	0.17	8.20	82.60	0.35	0.26	0.09	0.00	7.04	1.30	
	1.49	0.98	84.31	0.72	1.27	1.56	0.00	2.58	1.74	
SHOPPING	10	32	4	26	20	3	0	33	926	1054
	0.03	0.10	0.01	0.08	0.06	0.01	0.00	0.10	2.90	3.31
	0.95	3.04	0.38	2.47	1.90	0.28	0.00	3.13	87.86	
	3.72	0.16	0.18	2.33	4.24	2.34	0.00	0.52	53.77	
EATING	20	2887	299	168	332	7	7	12	70	3802
	0.06	9.05	0.94	0.53	1.04	0.02	0.02	0.04	0.22	11.92
	0.53	75.93	7.86	4.42	8.73	0.18	0.19	0.32	1.84	
	7.43	14.85	13.18	15.03	70.34	5.47	4.58	0.19	4.07	
TRAVEL	1	102	9	21	5	0	3	6021	33	6195
	0.00	0.32	0.03	0.07	0.02	0.00	0.01	18.88	0.10	19.43
	0.02	1.65	0.15	0.34	0.08	0.00	0.05	97.19	0.53	
	0.37	0.52	0.40	1.88	1.06	0.00	1.96	95.31	1.92	
INDOOR HOUSEWK	4	4615	6	45	0	1	10	22	18	4721
	0.01	14.47	0.02	0.14	0.00	0.00	0.03	0.07	0.06	14.80
	0.08	97.75	0.13	0.95	0.00	0.02	0.21	0.47	0.38	
	1.49	23.74	0.26	4.03	0.00	0.78	6.54	0.35	1.05	
OUTDOOR HOUSEWK	2	346	0	3	0	0	4	0	13	368
	0.01	1.08	0.00	0.01	0.00	0.00	0.01	0.00	0.04	1.15
	0.54	94.02	0.00	0.82	0.00	0.00	1.09	0.00	3.53	
	0.74	1.78	0.00	0.27	0.00	0.00	2.61	0.00	0.75	
TOTAL	269	19443	2269	1118	472	128	153	6317	1722	31891
	0.84	60.97	7.11	3.51	1.48	0.40	0.48	19.81	5.40	100.00

(CONTINUED)

Created for the 1975 Data Base, respondents only, first day only, not controlling for company. Note that since the activities were not weighted by duration in this module, percent totals represent percent of recorded activities, not percent of time spent per activity. (See Table 5-9 for the percent of time spent per activity.)

* When an activity does not fit into any of the given categories, it will appear in the category labeled "None."

Table 5-1 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF ACTIVITIES AT EACH LOCATION

TABLE OF ACTIVITY BY LOCATION

ACTIVITY LOCATION (OF ACTIVITY)

ACTIVITY FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAURANT, BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, PUB. BLD.	TOTAL
CHILD CARE	2	928	0	38	1	2	8	14	34	1027
	0.01	2.91	0.00	0.12	0.00	0.01	0.03	0.04	0.11	3.22
	0.19	90.36	0.00	3.70	0.10	0.19	0.78	1.36	3.31	
	0.74	4.77	0.00	3.40	0.21	1.56	5.23	0.22	1.97	
CONVERSATION	5	719	14	4	14	1	2	3	49	811
	0.02	2.25	0.04	0.01	0.04	0.00	0.01	0.01	0.15	2.54
	0.62	88.66	1.73	0.49	1.73	0.12	0.25	0.37	6.04	
	1.86	3.70	0.62	0.36	2.97	0.78	1.31	0.05	2.85	
PERSONAL CARE	164	2411	6	149	3	4	1	10	99	2847
	0.51	7.56	0.02	0.47	0.01	0.01	0.00	0.03	0.31	8.93
	5.76	84.69	0.21	5.23	0.11	0.14	0.04	0.35	3.48	
	60.97	12.40	0.26	13.33	0.64	3.13	0.65	0.16	5.75	
SLEEPING	4	2992	5	38	0	1	3	0	22	3065
	0.01	9.38	0.02	0.12	0.00	0.00	0.01	0.00	0.07	9.61
	0.13	97.62	0.16	1.24	0.00	0.03	0.10	0.00	0.72	
	1.49	15.39	0.22	3.40	0.00	0.78	1.96	0.00	1.28	
STUDY	11	66	0	1	0	8	0	1	140	227
	0.03	0.21	0.00	0.00	0.00	0.03	0.00	0.00	0.44	0.71
	4.85	29.07	0.00	0.44	0.00	3.52	0.00	0.44	61.67	
	4.09	0.34	0.00	0.09	0.00	6.25	0.00	0.02	8.13	
ORGINIZATIONS	12	28	2	11	3	23	5	0	240	324
	0.04	0.09	0.01	0.03	0.01	0.07	0.02	0.00	0.75	1.02
	3.70	8.64	0.62	3.40	0.93	7.10	1.54	0.00	74.07	
	4.46	0.14	0.09	0.98	0.64	17.97	3.27	0.00	13.94	
ATTENDNG ENTER.	0	3	0	2	0	26	25	0	5	61
	0.00	0.01	0.00	0.01	0.00	0.08	0.08	0.00	0.02	0.19
	0.00	4.92	0.00	3.28	0.00	42.62	40.98	0.00	8.20	
	0.00	0.02	0.00	0.18	0.00	20.31	16.34	0.00	0.29	
TOTAL	269	19445	2269	1118	472	128	153	6317	1722	31891
	0.84	60.97	7.11	3.51	1.48	0.40	0.48	19.81	5.40	100.00

(CONTINUED)

Table 5-1 (Concluded)

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                          1975   HUMAN   ACTIVITIES   PROFILE

                           PERCENT OF ACTIVITIES AT EACH LOCATION

                                TABLE OF ACTIVITY BY LOCATION

ACTIVITY      LOCATION  (OF ACTIVITY)

FREQUENCY         I
 PERCENT          I
 ROW PCT          I
 COL PCT          IMISSING  IHOME     IAT PLACEIOTHER'S IRESTAUR-IINDOOR  IOUTDOOR IIN       IOTHER,  I
                  IDATA     I         I OF WORKIHOME    IANT,BAR ILEISURE ILEISURE ITRANSIT IPUB.BLD.I  TOTAL
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
SOCIAL  ACTIVITY  I      13 I     383 I       1 I     499 I      76 I       5 I       4 I       2 I       8 I    991
                  I    0.04 I    1.20 I    0.00 I    1.56 I    0.24 I    0.02 I    0.01 I    0.01 I    0.03 I   3.11
                  I    1.31 I   38.65 I    0.10 I   50.35 I    7.67 I    0.50 I    0.40 I    0.20 I    0.81 I
                  I    4.83 I    1.97 I    0.04 I   44.63 I   16.10 I    3.91 I    2.61 I    0.03 I    0.46 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
ACTIVE  LEISURE   I       6 I      32 I       1 I       4 I       2 I      38 I      62 I      32 I       9 I    186
                  I    0.02 I    0.10 I    0.00 I    0.01 I    0.01 I    0.12 I    0.19 I    0.10 I    0.03 I   0.58
                  I    3.23 I   17.20 I    0.54 I    2.15 I    1.08 I   20.43 I   33.33 I   17.20 I    4.84 I
                  I    2.23 I    0.16 I    0.04 I    0.36 I    0.42 I   29.69 I   40.52 I    0.51 I    0.52 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
HOBBIES           I       1 I     313 I       3 I      25 I       1 I       7 I      16 I       0 I       8 I    374
                  I    0.00 I    0.98 I    0.01 I    0.08 I    0.00 I    0.02 I    0.05 I    0.00 I    0.03 I   1.17
                  I    0.27 I   83.69 I    0.80 I    6.68 I    0.27 I    1.87 I    4.28 I    0.00 I    2.14 I
                  I    0.37 I    1.61 I    0.13 I    2.24 I    0.21 I    5.47 I   10.46 I    0.00 I    0.46 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
MUSIC             I       0 I     136 I       0 I      11 I       0 I       0 I       0 I       0 I       1 I    148
                  I    0.00 I    0.43 I    0.00 I    0.03 I    0.00 I    0.00 I    0.00 I    0.00 I    0.00 I   0.46
                  I    0.00 I   91.89 I    0.00 I    7.43 I    0.00 I    0.00 I    0.00 I    0.00 I    0.68 I
                  I    0.00 I    0.70 I    0.00 I    0.98 I    0.00 I    0.00 I    0.00 I    0.00 I    0.06 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
TV                I       1 I    2058 I       1 I      50 I       6 I       0 I       0 I       2 I       2 I   2120
                  I    0.00 I    6.45 I    0.00 I    0.16 I    0.02 I    0.00 I    0.00 I    0.01 I    0.01 I   6.65
                  I    0.05 I   97.08 I    0.05 I    2.36 I    0.28 I    0.00 I    0.00 I    0.09 I    0.09 I
                  I    0.37 I   10.58 I    0.04 I    4.47 I    1.27 I    0.00 I    0.00 I    0.03 I    0.12 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
READING           I       2 I     961 I       4 I       8 I       1 I       0 I       1 I       0 I       4 I    981
                  I    0.01 I    3.01 I    0.01 I    0.03 I    0.00 I    0.00 I    0.00 I    0.00 I    0.01 I   3.08
                  I    0.20 I   97.96 I    0.41 I    0.82 I    0.10 I    0.00 I    0.10 I    0.00 I    0.41 I
                  I    0.74 I    4.94 I    0.18 I    0.72 I    0.21 I    0.00 I    0.65 I    0.00 I    0.23 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
REST &  RELAXATN  I       6 I     241 I       1 I       7 I       2 I       0 I       2 I       2 I      11 I    272
                  I    0.02 I    0.76 I    0.00 I    0.02 I    0.01 I    0.00 I    0.01 I    0.01 I    0.03 I   0.85
                  I    2.21 I   88.60 I    0.37 I    2.57 I    0.74 I    0.00 I    0.74 I    0.74 I    4.04 I
                  I    2.23 I    1.24 I    0.04 I    0.63 I    0.42 I    0.00 I    1.31 I    0.03 I    0.64 I
------------------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
TOTAL                  269     19443      2269      1118       472       128       153      6317      1722    31891
                      0.84     60.97      7.11      3.51      1.48      0.40      0.48     19.81      5.40   100.00
```

Example for Module 2

Module 2 uses the complete 1975 data base to obtain the mean duration for activities without separating the data by company or location. This is achieved by deleting the variables COMPANY and LOCATION variables from the BY statements in the PROC SORT, second DATA, PROC MEANS and PROC PRINT steps. As a result, only one table is formed, instead of one for each combination of location and company values. Note that the FORMAT statement is no longer necessary (since LOCATION and COMPANY no longer figure in the module) and has been deleted. For the output, see Table 5-2.

Example for Module 3

In order to determine the average length of activities performed outside, in 1965, Module 3 used the 1965 data base, with company and activity no longer used to separate the data into different tables. The variables COMPANY and ACTIVITY are, therefore, deleted from the various BY statements as in the case with Module 2. Also notice the changes in the first DATA step caused by using the 1965 data. To determine the average time spent on activities outdoors, it is only necessary to look at 'outside' activities. These correspond to those occurring at LOCATION=2 (outside home), 7 (outdoor leisure), 8 (in transit), and, in some cases, 3 (at place of work). In the latter case, it was felt that construction (OCC_BRCH=3) and agriculture (OCC_BRCH=0) should be considered outside work. A subsetting IF statement specifying all of these was therefore added to the first DATA step. This required merging the background data with the diary so that the variable OCC_BRCH could be used. In addition, since the 1965 data distinguishes between inside and outside the home (see Appendix B), a new format was written (LOCATNA) so that outside home activities would be specified. Since only four LOCATION values are used, only these need to be specified. The FORMAT statement PROC PRINT is changed to use this format. See Table 5-3 for the output created from this module.

Example for Module 4

Module 4 uses the 1965 data base, to produce the table "Percent of People Performing Activity During Each Time Period." This requires changing the SET and TITLE statements (to reflect the change). In addition, the time interval was altered from 60 minutes to 30 minutes. See Table 5-4 for the output.

Table 5-2

1975 HUMAN ACTIVITIES PROFILE

MEAN DURATION OF ACTIVITIES

ACTIVITY	MINUTES	STD_DEV	NUM_REC	NUM_RESP
ACTIVE LEISURE	88.642	85.764	1170	627
ATTENDNG ENTER.	121.808	75.366	421	315
CHILD CARE	27.749	31.512	4778	867
CONVERSATION	32.109	32.597	3743	1402
EATING	32.746	25.939	17585	2377
HOBBIES	79.236	76.640	1936	873
INDOOR HOUSEWK	35.019	39.323	21356	2037
MUSIC	58.219	55.466	663	414
NONE	25.000	22.913	3	3
ORGANIZATIONS	82.060	59.807	1763	775
OUTDOOR HOUSEWK	96.889	76.629	2054	960
PERSONAL CARE	40.785	123.406	14095	2323
READING	51.006	43.181	4736	1568
REST & RELAXATN	60.477	62.080	1637	927
SHOPPING	39.662	44.172	4905	1617
SLEEPING	245.781	178.426	14185	2399
SOCIAL ACTIVITY	73.500	66.721	4986	1588
STUDY	88.452	76.953	615	227
TRAVEL	18.845	26.076	27869	2251
TV	92.748	73.399	9199	2165
WORK	115.413	113.387	9535	1370

Created for the complete 1975 Data Base without separating by company or location.

Table 5-3

1965 HUMAN ACTIVI.IES P.OFILE

AVERAGE TIME AT LOCATION OUT OF DOORS

LOCATION	MINUTES	STD_DEV	NUM_REC	NUM_RESP
OUTSIDE HOME	37.337	38.7651	208	153
AT PLACE OF WORK	82.366	79.4353	239	43
OUTDOOR LEISURE	100.447	83.3474	38	28
IN TRANSIT	18.351	16.3962	5456	1143

Average Time at Location Module was used to determine the average length of activities performed outside, according to 1965 Data Base.

Table 5-4

1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	0:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	TOTAL
	.	.	.	.	.	.	.	.	.	.	
WORK	3.95	3.71	2.99	2.66	2.09	1.93	1.85	1.85	1.61	1.93	
TRAVEL	1.29	0.89	0.65	0.72	0.24	0.56	0.32	0.08	0.24	0.48	
EATING	0.72	0.64	0.89	0.24	0.48	0.16	0.32	0.32	0.32	0.56	
INDOOR HOUSEWK	2.01	1.05	0.73	0.08	0.08	0.16	0.08	0.24	0.40	0.40	
OUTDOOR HOUSEWK	0.08	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	
CHILD CARE	0.56	0.32	0.08	0.08	0.16	0.08	0.08	0.00	0.48	0.32	
CONVERSATION	0.40	0.24	0.24	0.16	0.16	0.24	0.16	0.08	0.00	0.08	
SHOPPING	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PERSONAL CARE	3.14	2.50	1.94	1.37	0.88	0.97	0.81	0.32	1.21	1.05	
SLEEPING	75.52	79.69	86.44	90.02	92.92	94.20	95.33	95.98	95.25	94.69	
REST & RELAXATN	0.08	0.08	0.08	0.08	0.08	0.08	0.16	0.24	0.08	0.24	
STUDY	0.16	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ORGANIZATIONS	0.24	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	
ATTENDING ENTER	0.40	0.24	0.16	0.08	0.08	0.08	0.08	0.08	0.08	0.08	
SOCIAL ACTIVITY	2.66	2.18	1.61	1.29	1.05	0.64	0.40	0.24	0.08	0.00	
ACTIVE LEISURE	0.32	0.24	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	
HOBBIES	0.08	0.16	0.00	0.08	0.08	0.08	0.00	0.00	0.00	0.00	
8	0.32	0.40	0.24	0.16	0.08	0.00	0.00	0.00	0.00	0.00	
MUSIC	0.16	0.08	0.08	0.08	0.00	0.00	0.08	0.08	0.00	0.08	
TV	5.64	5.32	2.82	1.69	1.05	0.48	0.16	0.24	0.00	0.00	
READING	2.17	2.18	0.89	0.97	0.56	0.32	0.16	0.24	0.24	0.08	
TOTAL	1242	1241	1239	1242	1243	1242	1242	1243	1243	1242	59528

(CONTINUED)

The activity designated 8 (work breaks) for the 1965 Data Base should have been integrated into the category Work. This problem with the format occurs in the 1965 Data Base only and will be examined and resolved for the final report.

Table 5-4 (Continued)

1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	TOTAL
	.	.	.	.	.	.	.	.	.	.	
WORK	2.33	2.82	4.26	8.29	14.48	21.66	30.19	35.91	39.48	40.13	
TRAVEL	0.80	1.77	4.26	6.52	7.48	9.98	8.70	5.96	4.75	4.51	
EATING	1.45	2.25	5.15	7.72	9.81	9.58	8.21	7.17	5.64	3.95	
INDOOR HOUSEWK	1.45	2.82	6.68	7.16	12.15	12.24	15.78	16.59	18.86	20.15	
OUTDOOR HOUSEWK	0.16	0.24	0.32	0.32	0.64	0.48	0.97	0.64	0.56	0.97	
CHILD CARE	0.24	0.40	1.05	1.53	4.18	5.31	5.80	3.38	3.06	2.90	
CONVERSATION	0.00	0.16	0.32	0.48	0.48	0.64	0.81	1.05	1.37	1.45	
SHOPPING	0.00	0.16	0.08	0.00	0.00	0.48	0.81	1.13	1.69	2.58	
PERSONAL CARE	2.82	5.15	8.13	10.30	10.22	9.18	5.64	6.68	6.37	5.96	
SLEEPING	89.94	82.93	67.90	54.38	36.69	26.89	18.44	14.49	8.86	7.25	
REST & RELAXATN	0.24	0.24	0.32	0.32	0.32	0.24	0.40	0.24	0.48	0.48	
STUDY	0.00	0.00	0.00	0.08	0.16	0.48	0.81	1.05	1.29	1.29	
ORGANIZATIONS	0.08	0.24	0.08	0.16	0.16	0.24	0.64	0.56	1.53	2.58	
ATTENDING ENTER	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SOCIAL ACTIVITY	0.08	0.08	0.00	0.08	0.24	0.24	0.56	0.97	1.05	1.05	
ACTIVE LEISURE	0.08	0.00	0.16	0.24	0.16	0.16	0.08	0.00	0.40	0.48	
HOBBIES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.24	
See first page 8	0.00	0.00	0.00	0.00	0.16	0.08	0.08	0.00	0.24	0.24	
MUSIC	0.00	0.16	0.24	0.72	0.48	0.32	0.16	0.24	0.24	0.24	
TV	0.00	0.08	0.24	0.24	0.08	0.24	0.40	0.56	0.64	1.13	
READING	0.24	0.48	0.80	1.45	2.09	1.53	1.53	3.38	3.22	2.42	
TOTAL	1243	1242	1243	1243	1243	1242	1242	1242	1241	1241	59528

(CONTINUED)

Table 5-4 (Continued)

1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	TOTAL
	.	.	.	.	.	.	.	.	.	.	
WORK	40.82	41.26	38.49	34.03	21.80	29.12	37.09	38.79	40.36	40.52	
TRAVEL	4.59	5.80	5.72	7.56	6.52	7.96	5.63	5.65	6.38	8.39	
EATING	2.50	2.74	4.91	11.34	25.99	18.74	10.62	6.45	3.87	2.10	
INDOOR HOUSEWK	19.32	17.73	18.52	16.41	15.61	13.92	14.48	14.76	14.45	13.96	
OUTDOOR HOUSEWK	0.64	0.73	0.81	0.80	0.88	0.64	0.72	1.13	0.89	0.73	
CHILD CARE	2.90	1.85	2.17	2.17	2.57	2.01	2.17	1.85	1.78	2.18	
CONVERSATION	2.01	1.93	1.53	1.85	1.69	1.77	1.29	1.61	1.21	1.21	
SHOPPING	4.35	5.32	5.56	4.83	4.42	3.46	4.34	5.65	5.57	5.17	
PERSONAL CARE	5.15	4.43	3.22	3.14	3.46	3.38	3.86	2.26	1.86	3.07	
SLEEPING	5.56	4.92	3.38	3.22	2.49	2.57	2.65	2.98	3.07	2.42	
REST & RELAXATN	0.64	0.24	0.32	0.40	0.97	1.05	1.29	1.77	1.69	1.37	
STUDY	1.37	1.45	1.69	1.29	0.88	1.05	1.21	1.37	1.37	0.97	
ORGANIZATIONS	3.14	3.87	4.11	3.38	2.49	1.85	1.05	0.81	1.05	0.89	
ATTENDING ENTER	0.00	0.00	0.08	0.08	0.00	0.08	0.08	0.24	0.48	0.56	
SOCIAL ACTIVITY	1.77	2.34	2.74	3.78	4.42	4.99	5.63	5.89	5.25	6.54	
ACTIVE LEISURE	0.72	0.73	1.05	0.56	0.64	0.64	0.97	0.65	0.97	0.65	
HOBBIES	0.32	0.24	0.24	0.08	0.24	0.24	0.24	0.32	0.40	0.45	
See first page 8	0.56	0.32	0.40	0.40	0.32	0.48	0.88	0.73	1.13	0.89	
MUSIC	0.16	0.24	0.16	0.16	0.32	0.24	0.32	0.32	0.32	0.48	
TV	1.85	1.77	2.50	2.17	2.09	3.22	3.30	4.44	4.68	4.60	
READING	1.61	2.10	2.42	2.33	2.17	2.57	2.17	2.34	3.23	2.66	
TOTAL	1242	1241	1242	1243	1243	1243	1243	1240	1239	1239	59528

(CONTINUED)

Table 5-4 (Continued)

1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	15:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30	20:00	TOTAL
	.	.	.	.	.	.	.	.	.	.	
WORK	39.27	36.94	31.32	24.68	17.34	12.75	10.73	9.85	9.02	9.94	
TRAVEL	9.68	10.32	9.42	13.55	11.21	10.17	7.18	9.13	7.49	6.87	
EATING	2.26	1.85	2.90	6.37	12.18	18.56	21.95	14.30	11.04	6.47	
INDOOR HOUSEWK	11.13	12.90	15.86	17.58	20.89	20.58	18.48	15.51	12.17	10.75	
OUTDOOR HOUSEWK	1.29	0.81	0.89	0.48	0.97	0.89	0.65	0.40	0.08	0.24	
CHILD CARE	2.42	3.39	3.30	2.10	2.34	2.99	2.74	4.44	5.48	4.77	
CONVERSATION	2.02	2.18	2.42	2.82	3.06	2.99	1.94	2.75	2.18	2.10	
SHOPPING	5.81	5.65	6.28	4.44	4.60	3.55	3.23	2.99	4.11	3.96	
PERSONAL CARE	3.63	3.55	4.11	4.44	4.60	6.21	6.30	5.57	5.08	4.69	
SLEEPING	1.94	2.66	3.30	3.06	2.90	2.10	2.02	2.50	3.14	2.51	
REST & RELAXATN	1.53	1.21	1.37	1.29	1.21	1.45	1.29	0.97	0.89	0.57	
STUDY	0.89	0.97	0.72	0.56	0.48	0.40	0.56	0.73	1.37	1.78	
ORGANIZATIONS	0.89	1.21	1.13	0.73	0.73	0.56	0.48	0.57	1.69	3.31	
ATTENDING ENTER	0.65	0.65	0.56	0.40	0.40	0.32	0.24	0.65	1.21	1.78	
SOCIAL ACTIVITY	6.53	6.37	6.76	6.53	5.73	5.89	8.39	9.05	11.36	12.69	
ACTIVE LEISURE	0.48	0.65	0.81	1.05	0.73	0.40	0.73	0.81	1.69	1.70	
HOBBIES	0.65	0.48	0.64	0.65	0.81	0.48	0.81	0.73	1.05	0.97	
See first page 8	0.89	0.89	0.64	0.56	0.24	0.40	0.40	0.48	0.56	0.65	
MUSIC	0.48	0.16	0.48	0.48	0.89	0.89	0.48	0.73	0.56	0.57	
TV	4.92	5.00	4.35	4.44	5.00	4.84	7.51	11.47	14.83	18.43	
READING	2.66	2.18	2.74	3.79	3.71	3.55	3.87	6.38	5.00	5.25	
TOTAL	1240	1240	1242	1240	1240	1239	1239	1238	1241	1237	59528

(CONTINUED)

Table 5-4 (Concluded)

1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY) COL PCT	20:30	21:00	21:30	22:00	22:30	23:00	23:30	24:00	TOTAL
	.	.	.	.	.	.	.	.	
WORK	9.47	8.97	7.76	6.95	6.26	6.19	4.70	4.05	
TRAVEL	6.55	4.28	4.53	3.72	3.17	2.77	2.68	1.86	
EATING	3.56	3.07	2.67	2.50	2.19	1.87	2.03	1.21	
INDOOR HOUSEWK	9.71	8.16	8.4[illegible]	6.54	5.44	4.07	2.92	1.78	
OUTDOOR HOUSEWK	0.32	0.24	0.00	0.16	0.16	0.16	0.08	0.08	
CHILD CARE	5.02	4.37	2.59	1.94	1.14	0.98	0.49	0.49	
CONVERSATION	2.83	3.07	3.56	2.34	2.11	2.28	1.14	0.97	
SHOPPING	3.32	2.75	1.29	0.57	0.32	0.33	0.00	0.00	
PERSONAL CARE	3.24	3.56	5.66	6.30	8.12	7.49	6.49	4.45	
SLEEPING	2.27	2.91	5.56	9.45	22.34	33.22	54.34	66.75	
REST & RELAXATN	0.57	0.89	0.49	0.48	0.49	0.57	0.24	0.40	
STUDY	1.86	1.70	1.54	1.13	1.14	0.65	0.41	0.24	
ORGANIZATIONS	2.99	3.15	2.43	2.34	0.73	0.65	0.41	0.40	
ATTENDING ENTER	2.83	3.23	3.31	3.31	3.01	2.52	1.95	1.54	
SOCIAL ACTIVITY	12.70	12.77	11.56	11.23	9.50	7.98	5.27	4.37	
ACTIVE LEISURE	1.62	1.29	1.46	1.21	1.06	0.81	0.57	0.24	
HOBBIES	0.81	1.05	0.97	0.81	0.41	0.16	0.08	0.16	
See first page 8	1.46	1.62	1.21	1.21	1.06	0.90	0.49	0.57	
MUSIC	0.89	0.97	1.29	1.21	1.14	0.65	0.73	0.65	
TV	21.76	25.71	28.05	24.64	23.88	20.85	12.25	8.09	
READING	6.23	6.22	5.66	6.95	6.34	4.89	2.76	1.70	
TOTAL	1236	1237	1237	1238	1231	1228	1233	1236	59528

Example for Module 5

Module 5 uses the 1975 data base (respondents, first day only), and the appropriate subsetting IF statement was added to specify this. It was desired to examine only those activities which accompanied conversation and a second subsetting IF statement was included which specified only observations where either the primary or secondary activity was one of the conversation categories. To select only the conversation category, all the numerical values making up the conversation category (961, 962, 963, 239 refer to list of activity variables in Table B-6 of Appendix B) should be specified in the IF statement. In this case, however, it was decided to include only two of the four values (963, 269) in the conversation category, as these were the main types of conversation of interest. An additional TITLE statement was added to describe this aspect of the data. Table 5-5 is the output from this example Module.

Example for Module 6

Module 6 uses the 1975 data base. To illustrate the use of a small select sample based on background data, only single male respondents were considered. This required merging the background and diary data sets so that the variables SEX_OF_R and MARITLST could be used in the subsetting IF statement. Again, an additional TITLE statement was added to provide further description of the resultant table. The output from this Module is illustrated in Table 5-6.

Table 5-5

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

ACTIVITIES OCCURING WITH CONVERSATION ONLY

TABLE OF PRIMARY BY SECONDARY

PRIMARY ACTIVITY SECONDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	NONE	WORK	INDOOR HOUSEWK	CHILD CARE	CONVERSATION	PERSONAL CARE	EATING	SLEEPING	STUDY	TOTAL
WORK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	64 100.00 0.71	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	64
SHOPPING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	311 100.00 3.43	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	311
EATING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2520 100.00 27.82	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2520
TRAVEL	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2289 100.00 25.27	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2289
INDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1638 100.00 18.09	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1638
OUTDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	118 100.00 1.30	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	118
CHILD CARE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	529 100.00 5.84	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	529
CONVERSATION	1433 82.31 100.00	1 0.06 100.00	24 1.38 100.00	12 0.69 100.00	37 2.13 0.41	13 0.75 100.00	50 2.87 100.00	2 0.11 100.00	3 0.17 100.00	1741
PERSONAL CARE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	268 100.00 2.96	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	268
SLEEPING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	55 100.00 0.61	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	55
TOTAL	1433	1	24	12	9057	13	50	2	3	10761

(CONTINUED)

Created from the 1975 Data Base, respondents, first day only.

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Table 5-5 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

ACTIVITIES OCCURING WITH CONVERSATION ONLY

TABLE OF PRIMARY BY SECONDARY

PRIMARY ACTIVITY SECNDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	NONE	WORK	INDOOR HOUSEWK	CHILD CARE	CONVERSATION	PERSONAL CARE	EATING	SLEEPING	STUDY	TOTAL
STUDY	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2 100.00 0.02	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2
ORGANIZATIONS	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	31 100.00 0.34	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	31
ATTENDNG ENTER.	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	23 100.00 0.25	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	23
SOCIAL ACTIVITY	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	29 100.00 0.32	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	29
ACTIVE LEISURE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	74 100.00 0.82	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	74
HOBBIES	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	69 100.00 0.76	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	69
MUSIC	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	37 100.00 0.41	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	37
TV	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	660 100.00 7.29	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	660
READING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	175 100.00 1.93	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	175
REST & RELAXAIN	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	128 100.00 1.41	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	128
TOTAL	1033	1	24	12	9057	13	50	2	3	10761

(CONTINUED)

Table 5-5 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

ACTIVITIES OCCURING WITH CONVERSATION ONLY

TABLE OF PRIMARY BY SECNDARY

PRIMARY ACTIVITY SECNDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	ORGANIZATIONS	SOCIAL ACTIVITY	HOBBIES	MUSIC	TV	READING	REST & RELAXATN	TRAVEL	TOTAL
WORK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	64
SHOPPING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	311
EATING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2520
TRAVEL	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2289
INDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1638
OUTDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	119
CHILD CARE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	529
CONVERSATION	1 0.06 100.00	3 0.17 100.00	2 0.11 100.00	46 2.64 100.00	88 5.05 100.00	23 1.32 100.00	2 0.11 100.00	1 0.06 100.00	1741
PERSONAL CARE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	268
SLEEPING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	55
TOTAL	1	3	2	46	88	23	2	1	10761

(CONTINUED)

Table 5-5 (Concluded)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME SECONDARY ACTIVITY OCCURS WITH PRIMARY ACTIVITY

ACTIVITIES OCCURING WITH CONVERSATION ONLY

TABLE OF PRIMARY BY SECONDARY

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PRIMARY ACTIVITY SECONDARY ACTIVITY

FREQUENCY ROW PCT COL PCT	ORGANIZATIONS	SOCIAL ACTIVITY	HOBBIES	MUSIC	TV	READING	REST & RELAXATN	TRAVEL	TOTAL
STUDY	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	2
ORGANIZATIONS	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	31
ATTENDNG ENTER.	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	23
SOCIAL ACTIVITY	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	29
ACTIVE LEISURE	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	74
HOBBIES	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	69
MUSIC	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	37
TV	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	660
READING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	175
REST & RELAXATN	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	128
TOTAL	1	3	2	46	88	23	2	1	10761

Table 5-6

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          PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

                              FOR SINGLE MEN ONLY

                            TABLE OF BEFORE BY AFTER

BEFORE     ACTIVITY  AFTER     ACTIVITY

FREQUENCY        I
 ROW PCT         I
 COL PCT         IWORK    ISHOPPINGIEATING  ITRAVEL  IINDOOR  IOUTDOOR ICHILD   IPERSONALISLEEPINGISTUDY   I
                 I        I        I        I        IHOUSEWK IHOUSEWK ICARE    I CARE    I        I        I  TOTAL
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
WORK             I    117 I      1 I     41 I    152 I      2 I      0 I      0 I      9 I      3 I      0 I
                 I  34.72 I   0.30 I  12.17 I  45.10 I   0.59 I   0.00 I   0.00 I   2.67 I   0.89 I   0.00 I   337
                 I  34.82 I   0.74 I   7.08 I  12.73 I   0.68 I   0.00 I   0.00 I   1.93 I   0.95 I   0.00 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SHOPPING         I      0 I      0 I      1 I    128 I      0 I      0 I      0 I      0 I      0 I      1 I
                 I   0.00 I   0.00 I   0.74 I  94.12 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.74 I   136
                 I   0.00 I   0.00 I   0.17 I  10.72 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   1.06 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
EATING           I     46 I      3 I      1 I    195 I     49 I     10 I      1 I     56 I     21 I     13 I
                 I   8.00 I   0.52 I   0.17 I  33.91 I   8.52 I   1.74 I   0.17 I   9.74 I   3.65 I   2.26 I   575
                 I  13.69 I   2.21 I   0.17 I  16.33 I  16.61 I  21.74 I  25.00 I  11.99 I   6.67 I  13.83 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TRAVEL           I    145 I    128 I    191 I     59 I     69 I     10 I      2 I     99 I     49 I     38 I
                 I  12.17 I  10.75 I  16.04 I   4.95 I   5.79 I   0.84 I   0.17 I   8.31 I   4.11 I   3.19 I  1191
                 I  43.15 I  94.12 I  32.99 I   4.94 I  23.39 I  21.74 I  50.00 I  21.20 I  15.56 I  40.43 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
INDOOR  HOUSEWK  I      3 I      0 I    104 I     46 I     29 I      4 I      0 I     31 I     14 I      2 I
                 I   1.02 I   0.00 I  35.25 I  15.59 I   9.83 I   1.36 I   0.00 I  10.51 I   4.75 I   0.68 I   295
                 I   0.89 I   0.00 I  17.96 I   3.85 I   9.83 I   8.70 I   0.00 I   6.64 I   4.44 I   2.13 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
OUTDOOR HOUSEWK  I      2 I      1 I      8 I     11 I      3 I      4 I      0 I      5 I      6 I      1 I
                 I   4.35 I   2.17 I  17.39 I  23.91 I   6.52 I   8.70 I   0.00 I  10.87 I  13.04 I   2.17 I    46
                 I   0.60 I   0.74 I   1.38 I   0.92 I   1.02 I   8.70 I   0.00 I   1.07 I   1.90 I   1.06 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
CHILD   CARE     I      0 I      0 I      1 I      1 I      0 I      0 I      0 I      0 I      0 I      0 I
                 I   0.00 I   0.00 I  25.00 I  25.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I     4
                 I   0.00 I   0.00 I   0.17 I   0.08 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
PERSONAL CARE    I      7 I      0 I     87 I    162 I     49 I      5 I      0 I      9 I     55 I      5 I
                 I   1.52 I   0.00 I  18.83 I  35.06 I  10.61 I   1.08 I   0.00 I   1.95 I  11.90 I   1.08 I   462
                 I   2.08 I   0.00 I  15.03 I  13.57 I  16.61 I  10.87 I   0.00 I   1.93 I  17.46 I   5.32 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SLEEPING         I      3 I      1 I     51 I     25 I     33 I      5 I      0 I    160 I      2 I      5 I
                 I   0.90 I   0.30 I  15.27 I   7.49 I   9.88 I   1.50 I   0.00 I  47.90 I   0.60 I   1.50 I   334
                 I   0.89 I   0.74 I   8.81 I   2.09 I  11.19 I  10.87 I   0.00 I  34.26 I   0.63 I   5.32 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
STUDY            I      0 I      1 I      8 I     36 I      1 I      0 I      0 I      9 I      9 I     16 I
                 I   0.00 I   1.04 I   8.33 I  37.50 I   1.04 I   0.00 I   0.00 I   9.38 I   9.38 I  16.67 I    96
                 I   0.00 I   0.74 I   1.38 I   3.02 I   0.34 I   0.00 I   0.00 I   1.93 I   2.86 I  17.02 I
-----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TOTAL                 336      136      579     1194      295       46        4      467      315       94    4497
(CONTINUED)
```

Created for the 1975 Data Base, single male respondents only.

Table 5-6 (Continued)

PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

FOR SINGLE MEN ONLY

TABLE OF BEFORE BY AFTER

BEFORE ACTIVITY AFTER ACTIVITY

FREQUENCY ROW PCT COL PCT	WORK	SHOPPING	EATING	TRAVEL	INDOOR HOUSEWK	OUTDOOR HOUSEWK	CHILD CARE	PERSONAL CARE	SLEEPING	STUDY	TOTAL
ORGANIZATIONS	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	25 80.65 2.09	1 3.23 0.34	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.23 0.32	1 3.23 1.06	31
ATTENDNG ENTER.	0 0.00 0.00	0 0.00 0.00	1 3.13 0.17	28 87.50 2.35	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 3.13 0.32	0 0.00 0.00	32
SOCIAL ACTIVITY	2 0.95 0.60	0 0.00 0.00	19 9.05 3.28	137 65.24 11.47	4 1.90 1.36	2 0.95 4.35	0 0.00 0.00	6 2.86 1.28	19 9.05 6.03	0 0.00 0.00	210
ACTIVE LEISURE	0 0.00 0.00	0 0.00 0.00	7 8.05 1.21	44 50.57 3.69	4 4.60 1.36	0 0.00 0.00	0 0.00 0.00	11 12.64 2.36	3 3.45 0.95	2 2.30 2.13	87
HOBBIES	1 1.52 0.30	0 0.00 0.00	3 4.55 0.52	20 30.30 1.68	4 6.06 1.36	1 1.52 2.17	0 0.00 0.00	4 6.06 0.86	5 7.58 1.59	1 1.52 1.06	66
MUSIC	0 0.00 0.00	0 0.00 0.00	4 6.56 0.69	23 37.70 1.93	5 8.20 1.69	1 1.64 2.17	0 0.00 0.00	5 8.20 1.07	8 13.11 2.54	0 0.00 0.00	61
TV	4 1.59 1.19	0 0.00 0.00	29 11.51 5.01	35 13.89 2.93	18 7.14 6.10	2 0.79 4.35	0 0.00 0.00	36 14.29 7.71	81 32.14 25.71	1 0.40 1.06	252
READING	1 0.69 0.30	0 0.00 0.00	7 4.83 1.21	23 15.86 1.93	18 12.41 6.10	1 0.69 2.17	0 0.00 0.00	16 11.03 3.43	29 20.00 9.21	1 0.69 1.06	145
CONVERSATION	3 3.23 0.89	1 1.08 0.74	7 7.53 1.21	32 34.41 2.68	5 5.38 1.69	0 0.00 0.00	1 1.08 25.00	9 9.68 1.93	7 7.53 2.22	5 5.38 5.32	93
REST & RELAXATN	2 4.55 0.60	0 0.00 0.00	9 20.45 1.55	12 27.27 1.01	1 2.27 0.34	1 2.27 2.17	0 0.00 0.00	2 4.55 0.43	2 4.55 0.63	2 4.55 2.13	44
TOTAL	336	136	579	1194	295	46	4	467	315	94	4497

(CONTINUED)

Table 5-6 (Continued)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

FOR SINGLE MEN ONLY

TABLE OF BEFORE BY AFTER

BEFORE ACTIVITY AFTER ACTIVITY

FREQUENCY ROW PCT COL PCT	ORGANIZATIONS	ATTENDNG ENTER.	SOCIAL ACTIVITY	ACTIVE LEISURE	HOBBIES	MUSIC	TV	READING	CONVERSATION	REST & RELAXATN	TOTAL
WORK	0 0.00 0.00	0 0.00 0.00	2 0.59 0.94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4 1.19 1.59	1 0.30 0.68	4 1.19 4.21	1 0.30 2.22	337
SHOPPING	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 0.74 1.59	2 1.47 0.79	2 1.47 1.37	1 0.74 1.05	0 0.00 0.00	136
EATING	0 0.00 0.00	1 0.17 2.94	22 3.83 10.38	8 1.39 9.20	12 2.09 18.18	13 2.26 20.63	69 12.00 27.38	39 6.78 26.71	10 1.74 10.53	6 1.04 13.33	575
TRAVEL	23 1.93 74.19	25 2.10 73.53	147 12.34 69.34	44 3.69 50.57	23 1.93 34.85	13 1.09 20.63	55 4.62 21.83	28 2.35 19.18	30 2.52 31.58	13 1.09 28.89	1191
INDOOR HOUSEWK	1 0.34 3.23	0 0.00 0.00	4 1.36 1.89	2 0.68 2.30	1 0.34 1.52	6 2.03 9.52	27 9.15 10.71	11 3.73 7.53	6 2.03 6.32	4 1.36 8.89	295
OUTDOOR HOUSEWK	0 0.00 0.00	0 0.00 0.00	2 4.35 0.94	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	1 2.17 0.40	0 0.00 0.00	1 2.17 1.05	1 2.17 2.22	46
CHILD CARE	0 0.00 0.00	0 0.00 0.00	1 25.00 0.47	0 0.00 0.00	0 0.00 0.00	1 25.00 1.59	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	0 0.00 0.00	4
PERSONAL CARE	0 0.00 0.00	0 0.00 0.00	4 0.87 1.89	6 1.30 6.90	6 1.30 9.09	11 2.38 17.46	27 5.84 10.71	19 4.11 13.01	7 1.52 7.37	3 0.65 6.67	462
SLEEPING	1 0.30 3.23	0 0.00 0.00	7 2.10 3.30	5 1.50 5.75	3 0.90 4.55	2 0.60 3.17	6 1.80 2.38	13 3.89 8.90	10 2.99 10.53	2 0.60 4.44	334
STUDY	1 1.04 3.23	0 0.00 0.00	0 0.00 0.00	4 4.17 4.60	0 0.00 0.00	1 1.04 1.59	5 5.21 1.98	0 0.00 0.00	3 3.13 3.16	2 2.08 4.44	96
TOTAL	31	34	212	87	66	63	252	146	95	45	4497

(CONTINUED)

Table 5-6 (Concluded)

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

FOR SINGLE MEN ONLY

TABLE OF BEFORE BY AFTER

BEFORE ACTIVITY AFTER ACTIVITY

FREQUENCY ROW PCT COL PCT	ORGANIZATIONS	ATTENDNG ENTER.	SOCIAL ACTIVITY	ACTIVE LEISURE	HOBBIES	MUSIC	TV	READING	CONVERSATION	REST & RELAXATN	TOTAL
ORGANIZATIONS	2	0	0	0	0	0	0	0	1	0	31
	6.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23	0.00	
	6.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00	
ATTENDNG ENTER.	0	1	1	0	0	0	0	0	0	0	32
	0.00	3.13	3.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	2.94	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SOCIAL ACTIVITY	0	4	3	1	2	4	5	1	1	0	210
	0.00	1.90	1.43	0.48	0.95	1.90	2.38	0.48	0.48	0.06	
	0.00	11.76	1.42	1.15	3.03	6.35	1.98	0.68	1.05	0.00	
ACTIVE LEISURE	0	1	2	1	4	0	4	0	2	2	87
	0.00	1.15	2.30	1.15	4.60	0.00	4.60	0.00	2.30	2.30	
	0.00	2.94	0.94	1.15	6.06	0.00	1.59	0.00	2.11	4.44	
HOBBIES	0	0	3	9	0	3	6	3	1	2	66
	0.00	0.00	4.55	13.64	0.00	4.55	9.09	4.55	1.52	3.03	
	0.00	0.00	1.42	10.34	0.00	4.76	2.38	2.05	1.05	4.44	
MUSIC	0	1	4	0	2	0	3	1	2	2	61
	0.00	1.64	6.56	0.00	3.28	0.00	4.92	1.64	3.28	3.28	
	0.00	2.94	1.89	0.00	3.03	0.00	1.19	0.68	2.11	4.44	
TV	2	0	5	3	7	3	0	20	3	3	252
	0.79	0.00	1.98	1.19	2.78	1.19	0.00	7.94	1.19	1.19	
	6.45	0.00	2.36	3.45	10.61	4.76	0.00	13.70	3.16	6.67	
READING	0	0	2	0	4	4	26	3	7	3	145
	0.00	0.00	1.38	0.00	2.76	2.76	17.93	2.07	4.83	2.07	
	0.00	0.00	0.94	0.00	6.06	6.35	10.32	2.05	7.37	6.67	
CONVERSATION	1	1	2	3	1	1	7	3	3	1	93
	1.08	1.08	2.15	3.23	1.08	1.08	7.53	3.23	3.23	1.08	
	3.23	2.94	0.94	3.45	1.52	1.59	2.78	2.05	3.16	2.22	
REST & RELAXATN	0	0	1	1	1	0	5	2	3	0	44
	0.00	0.00	2.27	2.27	2.27	0.00	11.36	4.55	6.82	0.00	
	0.00	0.00	0.47	1.15	1.52	0.00	1.98	1.37	3.16	0.00	
TOTAL	31	34	212	87	66	63	252	146	95	45	4497

5.2 Program 2

The data cards to be input for Program 2 are listed in Figure 5-3 and a discussion of this input is provided below.

This second program uses the JCL cards to call SASFILE, SASFILE2, and SASLIB from tape. (Note the difference in the JCL statements from Figure 5-1 where they were called from disk.) Some of the examples of the modules in this program are more complicated than those provided in the first program.

Example for Module 1

Module 1 uses the 1975 data base (respondents, first day only) to illustrate the use of the original more detailed activity categories rather than the newly formatted 20 activities. It was desired to look only at individual social activities and an additional subsetting IF statement was included to limit the data set to this. Since no other activity codes, other than the social activity codes desired, fall between 752 and 789 (refer to Appendix B, Activity Variables, Table B-6), the IF statement can be written in, specifying the code to fall within this interval instead of listing the individual codes. Again it was decided not to separate the data by company and this was done by eliminating the variable COMPANY from the TABLES statement. In addition, it was desired to obtain the distribution of activities by day of the week and this was achieved by the addition of a PROC SORT and a DATA step (see Table 5-7). Since under the usual format all the social activities would be combined into one category (SOCIAL ACTIVITY), a new format was necessary. This was created using PROC FORMAT and the FORMAT statement was altered to use the new format which lists each social activity separately. For the output, see Tables 5-7 and 5-8.

Additional Example for Module 1

Another example was run for Module 1, using the entire 1975 data base, to obtain the percent of time (not recorded activities) spent at each activity/location combination. This is a simple modification of Module 1, using the WEIGHT DURATION; statement, and the output is provided in Table 5-9. Note the variable DURATION must be included in the KEEP statement.

Example for Module 2

In order to determine the average time for activities spent in transit, and the average time spent in transit "while alone," the 1975 data base, respondents, first day only, was used. None of the modules fits this situation exactly, but it is

```
//EPAJIG   JOB (S2KC,MBZS),DOUGLAS,PRTY=2,MSGLEVEL=(1,1),TIME=50
/*PASSWORD      XXX
//FMT EXEC SAS9,PRINT=A
//SASFILE  DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=SAS1975,DISP=OLD
//SASFILE2 DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=SAS1965,DISP=OLD,LABEL=2
//SASLIB DD UNIT=3400-5,VOL=SER=WYLSAS,DSN=SASLIB,DISP=OLD,LABEL=3
OPTIONS NODATE NONUMBER;
******************
        1
****************;
DATA WORK1;
      SET SASFILE.DIARY;
      ACTIVITY=PRIMARY;
* INSERT SELECTION CRITERIA;
      IF R_OR_S='R' AND DAY=1;
      IF PRIMARY GE 752 AND PRIMARY LE 789;
      KEEP LOCATION ACTIVITY RESP_NO R_OR_S DAY_WEEK;
PROC SORT;
      BY DAY_WEEK;
DATA;
      SET;
      BY DAY_WEEK;
      N+1;
      IF LAST.DAY_WEEK THEN DO;
      FILE PRINT;
      PUT / @30 DAY_WEEK DAYWEEK. @40 N;
      N=0;
      END;
PROC FORMAT;
      VALUES SOCIAL
      752=VISITING WITH OTHERS
      769=PARTY
      771=AT BAR
      772=DANCING
      789=OTHER EVENTS;
PROC FREQ DATA=WORK1;
      TABLES ACTIVITY*LOCATION;
      FORMAT LOCATION LOCATN. ACTIVITY SOCIAL.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 PERCENT OF SOCIAL ACTIVITIES AT EACH LOCATION;

******************
        1
****************;
DATA;
      SET SASFILE.DIARY;
      ACTIVITY=PRIMARY;
* INSERT SELECTION CRITERIA;
      KEEP LOCATION ACTIVITY RESP_NO R_OR_S DURATION;
PROC FREQ;
      TABLES ACTIVITY*LOCATION;
      WEIGHT DURATION;
      FORMAT LOCATION LOCATN. ACTIVITY ACTIV.;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
      TITLE3 TIME SPENT AT ACTIVITIES BY LOCATION;
```

Figure 5-3. Program 2 Input

```
          2
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
* INSERT SELECTION CRITERIA;
      IF R_OR_S='R' AND DAY=1;
  IF COMPANY=1 AND LOCATION=8;
  KEEP DURATION RESP_NO R_OR_S;
DATA;
  SET;
  BY RESP_NO;
  N=0;
  IF LAST.RESP_NO THEN N=N+1;
PROC MEANS NOPRINT MEAN STD N SUM;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 AVERAGE TIME SPENT ALONE IN TRANSIT;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
***************
          2
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
* INSERT SELECTION CRITERIA;
      IF R_OR_S='R' AND DAY=1;
  IF LOCATION=8;
  KEEP DURATION RESP_NO R_OR_S;
DATA;
  SET;
  BY RESP_NO;
  N=0;
  IF LAST.RESP_NO THEN N=N+1;
PROC MEANS NOPRINT MEAN STD N SUM;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 AVERAGE TIME SPENT IN TRANSIT;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

Figure 5-3 (Continued)

```
****************
        3
***************;
DATA ;
  SET SASFILE2.DIARY;
  LENGTH ACTIVITY $16;
  ACTIVITY=(PRIMARY,ACTIV2_.);
* INSERT SELECTION CRITERIA;
  IF WITH2=1;
  KEEP LOCATION DURATION RESP_NO;
PROC SORT;
  BY LOCATION RESP_NO;
DATA;
  SET;
  BY LOCATION RESP_NO;
  N=0;
  IF LAST.RESP_NO THEN N=N+1;
PROC FORMAT;
VALUES LOCATNA
0=MISSING DATA
1=INSIDE  HOME
2= OUTSIDE HOME
3=AT PLACE OF WORK
4='OTHER''S HOME'
5='RESTAUR-ANT,BAR'
6=INDOOR  LEISURE
7=OUTDOOR LEISURE
8=IN      TRANSIT
9='OTHER,  PUB.BLD.';
PROC MEANS NOPRINT MEAN STD N;
  BY LOCATION;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
  FORMAT LOCATION LOCATNA.;
  LABEL COMPANY=COMPANY LOCATION=LOCATION;
      TITLE 1 9 6 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 AVERAGE TIME SPENT IN A CROWD BY LOCATION;
  ID LOCATION;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

Figure 5-3 (Concluded)

Table 5-7

Distribution by Day of Week for Social Activities Recorded in Table 5-8

```
          S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
MONDAY     147

TUESDAY    136

WEDNESDAY  103

THURSDAY   103

FRIDAY     153

SATURDAY   75

SUNDAY     273

         9 1
```

Table 5-8

1975 HUMAN ACTIVITIES PROFILE

PERCENT OF SOCIAL ACTIVITIES AT EACH LOCATION

TABLE OF ACTIVITY BY LOCATION

ACTIVITY LOCATION (OF ACTIVITY)

FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAURANT, BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, PUB.BLD.	TOTAL
VISITING WITH OT	2	344	1	458	3	0	3	2	4	817
	0.20	34.71	0.10	46.22	0.30	0.00	0.30	0.20	0.40	82.44
	0.24	42.11	0.12	56.06	0.37	0.00	0.37	0.24	0.49	
	15.38	89.82	100.00	91.78	3.95	0.00	75.00	100.00	50.00	
PARTY	6	16	0	36	4	1	0	0	0	63
	0.61	1.61	0.00	3.63	0.40	0.10	0.00	0.00	0.00	6.36
	9.52	25.40	0.00	57.14	6.35	1.59	0.00	0.00	0.00	
	46.15	4.18	0.00	7.21	5.26	20.00	0.00	0.00	0.00	
AT BAR	0	0	0	0	68	1	0	0	0	69
	0.00	0.00	0.00	0.00	6.86	0.10	0.00	0.00	0.00	6.96
	0.00	0.00	0.00	0.00	98.55	1.45	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	89.47	20.00	0.00	0.00	0.00	
DANCING	1	0	0	0	1	2	0	0	0	4
	0.10	0.00	0.00	0.00	0.10	0.20	0.00	0.00	0.00	0.40
	25.00	0.00	0.00	0.00	25.00	50.00	0.00	0.00	0.00	
	7.69	0.00	0.00	0.00	1.32	40.00	0.00	0.00	0.00	
OTHER EVENTS	4	23	0	5	0	1	1	0	4	38
	0.40	2.32	0.00	0.50	0.00	0.10	0.10	0.00	0.40	3.83
	10.53	60.53	0.00	13.16	0.00	2.63	2.63	0.00	10.53	
	30.77	6.01	0.00	1.00	0.00	20.00	25.00	0.00	50.00	
TOTAL	13	383	1	499	76	5	4	2	8	991
	1.31	38.65	0.10	50.35	7.67	0.50	0.40	0.20	0.81	100.00

Created for 1975 Data Base, respondents, first day only. "Social Activities" was reformatted to obtain location information on each individual social activity.

Table 5-9

```
1 9 7 5     H U M A N     A C T I V I T I E S     P R O F I L E
                 TIME SPENT AT ACTIVITIES BY LOCATION .

                     TABLE OF ACTIVITY BY LOCATION

ACTIVITY     LOCATION  (OF ACTIVITY)

FREQUENCY       I
 PERCENT        I
 ROW PCT        I
 COL PCT        IMISSING IHOME    IAT PLACEIOTHER'S IRESTAUR-IINDOOR  IOUTDOOR IIN      IOTHER,  I
                IDATA    I        I OF WORKIHOME    IANT,BAR ILEISURE ILEISURE ITRANSIT IPUB.BLD.I  TOTAL
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
NONE            I      0 I     30 I      0 I     45 I      0 I      0 I      0 I      0 I      0 I     75
                I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00
                I   0.00 I  40.00 I   0.00 I  60.00 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
                I   0.00 I   0.00 I   0.00 I   0.01 I   0.00 I   0.00 I   0.00 I   0.00 I   0.00 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
WORK            I   1054 I  71715 I 976577 I    875 I    947 I    185 I    538 I  41331 I   7241 I1100463
                I   0.01 I   0.74 I  10.02 I   0.01 I   0.01 I   0.00 I   0.01 I   0.42 I   0.07 I  11.29
                I   0.10 I   6.52 I  88.74 I   0.08 I   0.09 I   0.02 I   0.05 I   3.76 I   0.66 I
                I   0.40 I   1.07 I  94.79 I   0.21 I   0.82 I   0.30 I   0.41 I   7.14 I   1.55 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
SHOPPING        I   1363 I   7186 I    380 I   2174 I   1119 I    563 I    164 I   8273 I 173319 I 194541
                I   0.01 I   0.07 I   0.00 I   0.02 I   0.01 I   0.01 I   0.00 I   0.08 I   1.78 I   2.00
                I   0.70 I   3.69 I   0.20 I   1.12 I   0.58 I   0.29 I   0.08 I   4.25 I  89.09 I
                I   0.52 I   0.11 I   0.04 I   0.52 I   0.97 I   0.90 I   0.13 I   1.43 I  37.09 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
EATING          I   5236 I 388683 I  39955 I  41630 I  83397 I   2953 I   4176 I   1898 I  12107 I 580035
                I   0.05 I   3.99 I   0.41 I   0.43 I   0.86 I   0.03 I   0.04 I   0.02 I   0.12 I   5.95
                I   0.90 I  67.01 I   6.89 I   7.18 I  14.38 I   0.51 I   0.72 I   0.33 I   2.09 I
                I   1.99 I   5.82 I   3.88 I   9.93 I  72.47 I   4.73 I   3.18 I   0.33 I   2.59 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TRAVEL          I    363 I   8840 I   1274 I   1369 I    905 I     31 I   1286 I 506084 I   5051 I 525203
                I   0.00 I   0.09 I   0.01 I   0.01 I   0.01 I   0.00 I   0.01 I   5.19 I   0.05 I   5.39
                I   0.07 I   1.68 I   0.24 I   0.26 I   0.17 I   0.01 I   0.24 I  96.36 I   0.96 I
                I   0.14 I   0.13 I   0.12 I   0.33 I   0.79 I   0.05 I   0.98 I  87.39 I   1.08 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
INDOOR HOUSEWK  I   1260 I 729141 I    363 I   5666 I      0 I    595 I   4251 I   1839 I   4760 I 747875
                I   0.01 I   7.48 I   0.00 I   0.06 I   0.00 I   0.01 I   0.04 I   0.02 I   0.05 I   7.67
                I   0.17 I  97.50 I   0.05 I   0.76 I   0.00 I   0.08 I   0.57 I   0.25 I   0.64 I
                I   0.48 I  10.92 I   0.04 I   1.35 I   0.00 I   0.95 I   3.24 I   0.32 I   1.02 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
OUTDOOR HOUSEWK I    685 I 169750 I    950 I   1852 I     30 I     25 I   1170 I     45 I   3962 I 178469
                I   0.01 I   1.74 I   0.01 I   0.02 I   0.00 I   0.00 I   0.01 I   0.00 I   0.04 I   1.83
                I   0.38 I  95.11 I   0.53 I   1.04 I   0.02 I   0.01 I   0.66 I   0.03 I   2.22 I
                I   0.26 I   2.54 I   0.09 I   0.44 I   0.03 I   0.04 I   0.89 I   0.01 I   0.85 I
----------------+--------+--------+--------+--------+--------+--------+--------+--------+--------+
TOTAL             262511  6674977  1030259   419199   115081    62464   131133   579113   467306  9747043
                    2.69    68.53    10.57     4.30     1.18     0.64     1.35     5.94     4.79   100.00
(CONTINUED)
```

Since this table was created separately by both location and company, the output was somewhat large. Only the output for the company situation "Alone" has been included here.

Table 5-9 (Continued)

1975 HUMAN ACTIVITIES PROFILE

TIME SPENT AT ACTIVITIES BY LOCATION

TABLE OF ACTIVITY BY LOCATION

ACTIVITY LOCATION (OF ACTIVITY)

FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAURANT, BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, PUB.BLD.	TOTAL
CHILD CARE	572	114619	30	6686	133	412	2461	2050	5623	132586
	0.01	1.18	0.00	0.07	0.00	0.00	0.03	0.02	0.06	1.36
	0.43	86.45	0.02	5.04	0.10	0.31	1.86	1.55	4.24	
	0.22	1.72	0.00	1.59	0.12	0.66	1.88	0.35	1.20	
CONVERSATION	1899	99162	1650	1221	2110	1147	3466	605	8923	120183
	0.02	1.02	0.02	0.01	0.02	0.01	0.04	0.01	0.09	1.23
	1.58	82.51	1.37	1.02	1.76	0.95	2.88	0.50	7.42	
	0.72	1.48	0.16	0.29	1.83	1.84	2.64	0.10	1.91	
PERSONAL CARE	206034	295360	975	42063	443	813	981	1551	26639	574859
	2.11	3.03	0.01	0.43	0.00	0.01	0.01	0.02	0.27	5.90
	35.84	51.38	0.17	7.32	0.08	0.14	0.17	0.27	4.63	
	78.49	4.42	0.09	10.03	0.38	1.30	0.75	0.27	5.70	
SLEEPING	17255	3333865	5273	67736	60	1170	15699	1960	43387	3486405
	0.18	34.20	0.05	0.69	0.00	0.01	0.16	0.02	0.45	35.77
	0.49	95.62	0.15	1.94	0.00	0.03	0.45	0.06	1.24	
	6.57	49.91	0.51	16.16	0.05	1.87	11.97	0.34	9.28	
STUDY	-355	21116	252	741	10	865	60	207	31502	54398
	-0.00	0.22	0.00	0.01	0.00	0.01	0.00	0.00	0.32	0.56
	-0.65	38.82	0.46	1.36	0.02	1.59	0.11	0.38	57.91	
	-0.14	0.32	0.02	0.18	0.01	1.38	0.05	0.04	6.74	
ORGANIZATIONS	7597	7603	455	4058	1195	9891	3602	1294	108977	144672
	0.08	0.08	0.00	0.04	0.01	0.10	0.04	0.01	1.12	1.48
	5.25	5.26	0.31	2.80	0.83	6.84	2.49	0.89	75.33	
	2.89	0.11	0.04	0.97	1.04	15.83	2.75	0.22	23.32	
ATTENDING ENTER	1972	993	0	410	100	20726	19285	310	7485	51281
	0.02	0.01	0.00	0.00	0.00	0.21	0.20	0.00	0.08	0.53
	3.85	1.94	0.00	0.80	0.20	40.42	37.61	0.60	14.60	
	0.75	0.01	0.00	0.10	0.09	33.18	14.71	0.05	1.60	
TOTAL	262511	6674977	1030259	419199	115081	62464	131133	579113	467306	9747043
	2.69	68.53	10.57	4.30	1.18	0.64	1.35	5.94	4.79	100.00

(CONTINUED)

Table 5-9 (Concluded)

1975 HUMAN ACTIVITIES PROFILE

TIME SPENT AT ACTIVITIES BY LOCATION

TABLE OF ACTIVITY BY LOCATION

ACTIVITY LOCATION (OF ACTIVITY)

FREQUENCY PERCENT ROW PCT COL PCT	MISSING DATA	HOME	AT PLACE OF WORK	OTHER'S HOME	RESTAUR-ANT,BAR	INDOOR LEISURE	OUTDOOR LEISURE	IN TRANSIT	OTHER, PUB.BLD.	TOTAL
SOCIAL ACTIVITY	10238	133964	249	185965	20736	5623	2094	1012	6590	366471
	0.11	1.37	0.00	1.91	0.21	0.06	0.02	0.01	0.07	3.76
	2.79	36.56	0.07	50.74	5.66	1.53	0.57	0.28	1.80	
	3.90	2.01	0.02	44.36	18.02	9.00	1.60	0.17	1.41	
ACTIVE LEISURE	2025	11123	400	2380	500	12453	60321	8408	6160	103770
	0.02	0.11	0.00	0.02	0.01	0.13	0.62	0.09	0.06	1.06
	1.95	10.72	0.39	2.29	0.48	12.00	58.13	8.10	5.94	
	0.77	0.17	0.04	0.57	0.43	19.94	46.00	1.45	1.32	
HOBBIES	1770	114898	247	18079	885	4521	7336	434	5235	153405
	0.02	1.18	0.00	0.19	0.01	0.05	0.08	0.00	0.05	1.57
	1.15	74.90	0.16	11.79	0.58	2.95	4.78	0.28	3.41	
	0.67	1.72	0.02	4.31	0.77	7.24	5.59	0.07	1.12	
MUSIC	300	34044	135	2369	167	65	430	17	1072	38599
	0.00	0.35	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.40
	0.78	88.20	0.35	6.14	0.43	0.17	1.11	0.04	2.78	
	0.11	0.51	0.01	0.57	0.15	0.10	0.33	0.00	0.23	
TV	1452	820845	560	24235	1805	105	180	872	3135	853189
	0.01	8.42	0.01	0.25	0.02	0.00	0.00	0.01	0.03	8.75
	0.17	96.21	0.07	2.84	0.21	0.01	0.02	0.10	0.37	
	0.55	12.29	0.05	5.78	1.57	0.17	0.14	0.15	0.67	
READING	435	233059	454	4493	146	83	405	321	2167	241563
	0.00	2.39	0.00	0.05	0.00	0.00	0.00	0.00	0.02	2.48
	0.18	96.48	0.19	1.86	0.06	0.03	0.17	0.13	0.90	
	0.17	3.49	0.04	1.07	0.13	0.13	0.31	0.06	0.46	
REST & RELAXATN	1356	83981	80	5152	393	238	3228	602	3971	99001
	0.01	0.86	0.00	0.05	0.00	0.00	0.03	0.01	0.04	1.02
	1.37	84.83	0.08	5.20	0.40	0.24	3.26	0.61	4.01	
	0.52	1.26	0.01	1.23	0.34	0.38	2.46	0.10	0.85	
TOTAL	262511	6679977	1030259	419199	115081	62464	131133	579113	467306	9747043
	2.69	68.53	10.57	4.30	1.18	0.64	1.35	5.94	4.79	100.00

possible to modify Module 2 to fit the situation. This modification consists mainly of deleting superfluous statements. First of all, a subsetting IF statement must be added to limit our sample to the case of persons in transit (LOCATION=8) and, in one case, to persons alone (COMPANY=1); in addition to the IF statement selecting only respondents and their first day activities. The TITLE statements must also be altered to fit the new situation.

Beyond the one location and company situation desired, we have no interest in further separating the data by COMPANY, ACTIVITY, or LOCATION so these variables can be deleted from the KEEP statement, and any other statements concerning only these variables can be dropped. In particular, no ID statement (refer to Section 4.2.2, PROC PRINT) is desired since there will be only one observation outputted. There is also no need for a PROC SORT step, since of all of the variables the data set would normally be sorted by, only RESP_NO and R_OR_S remain. Since the data set is already sorted by the former (RESP_NO), and we are interested in respondent only so that the latter takes on only one value (R_OR_S = 'R'), sorting is unnecessary. Consequently, only RESP_NO remains in the BY statement of the second DATA step and LAST.RESP_NO must be substituted for LAST.R_OR_S (as is also the case when using the 1965 data base, where there is no R_OR_S variable.

The two modules resulting from these changes are much different, and simpler, than the usual form of Module 2. The two modules used to create the two tables are identical except for the selection criteria IF statement (which includes a company specification in first module, COMPANY=1),and the TITLE3 statement. The first Module 2 example produces Table 5-10 and the second Module 2 example produces Table 5-11.

Example for Module 3

Module 3 uses the 1965 data base to determine average length of activities spent in a crowd, for a given location, thus only activities performed in a crowd were considered. This requires the use of the WITH2 variable, which is only in the 1965 data (refer to Company Variables, Appendix B). WITH2=1 corresponds to being in a crowd and this is used in a subsetting IF statement. (The value of WITH does not need to be specified since all company situations which involve a

Table 5-10

```
1 9 7 5    H U M A N   A C T I V I T I E S   P R O F I L E
             AVERAGE TIME SPENT ALONE IN TRANSIT

      OBS     MINUTES     STD_DEV     NUM_REC     NUM_RESP

       1      17.3038     25.2861      3246          932
```

Table 5-11

```
1 9 7 5    H U M A N   A C T I V I T I E S   P R O F I L E
                AVERAGE TIME SPENT IN TRANSIT

      OBS     MINUTES     STD_DEV     NUM_REC     NUM_RESP

       1      18.6397     27.0749      6317         1237
```

crowd are to be considered.) Again it is desired not to separate data by activity or company (i.e., with spouse in a crowd) and again a new format is created to get the most information out of the LOCATION variable (inside and outside home data). In this case all 10 categories need to be given since all locations are to be analyzed. For this output, see Table 5-12.

In Appendix A, further examples are included which go beyond the confines of the given modules. They demonstrate the great flexibility inherent in the program (and SAS) and will aid the user when he desires his own variations.

Table 5-12

1975 HUMAN ACTIVITIES PROFILE

AVERAGE TIME AT LOCATION WHILE IN A CROWD

LOCATION	MINUTES	STD_DEV	NUM_REC	NUM_RESP
INSIDE HOME	46.211	27.1121	19	13
AT PLACE OF WORK	270.000	.	1	1
OTHER'S HOME	125.000	.	1	1
INDOOR LEISURE	235.000	.	1	1
IN TRANSIT	21.667	10.3280	6	3
OTHER, PUB.BLD.	57.500	62.5167	4	3

Created from the 1965 Data Base to determine average length of activities spent in a crowd.

REFERENCES

1. SAS USERS GUIDE, 1979 Edition, SAS Institute, Inc., North Carolina, 1979.

2. Robinson, John P., How Americans Used Time in 1965, Institute for Social Research, University of Michigan, 1977.

3. Robinson, John P., "Changes in Americans' Use of Time: 1965-1975, A Progress Report," Cleveland State University, 1977.

APPENDIX A

Additional Program Flexibility

The format of six self-contained modules restricts the flexibility of the program, although within it a wide variety of data formats can be achieved as demonstrated in Section 5.0. However, a good understanding of the components of the module described in Section 4.0 allows one to go beyond the strict confines of the program. Examples of some of the more useful possibilities are given below, involving some significant modification of the modules. If it is desired to go beyond the use of these six modules, the reader is referred to the SAS User's Guide,[1] as this takes us beyond the scope of this program. Using SAS, almost any desired analysis of the data is possible.

At the end of this appendix, information is provided to the user wishing to use this program on an interactive system.

A.1 Program 3

Program 3 was created to illustrate the additional flexibility of the program. The input statements for Program 3 are listed in Figure A-1.

Example for Module 2

This module was used with the 1975 data base to examine average time spent per day at activities, rather than average time of each individual activity. To do this, the data must be sorted by day (as well as the usual variables for this module, refer to Section 4.2.2 of the main text), thus forming a group for each person-day in each category desired. The data must then be summed up within these groups by an additional PROC MEANS step, thus producing for each person-day the amount of time spent at each activity (for each company-location combination) performed that day (variable PERDAY). The average and standard deviation for the time per day can then be calculated and printed out as before. It was decided not to calculate the number of respondents for each category as this would add too much to the complexity of the program.

```
//EPAJIG   JOB (S2KC,MBZS),DOUGLAS,PRTY=5,MSGLEVEL=(1,1),TIME=50
/*PASSWORD       XXX
//FMT EXEC SAS9,PRINT=A
//SASFILE DD UNIT=3330-1,VOL=SER=USER80,DSN=CN.EPAJIG.S2KC.DATA1975,
// DISP=OLD
//SASFILE2 DD UNIT=3330-1,VOL=SER=USER60,DSN=CN.EPAJIG.S2KC.DATA1965,
// DISP=OLD
//SASLIB DD DSN=CN.EPAJIG.S2KC.FMTLIB,
//  UNIT=3330-1,VOL=SER=USER79,
// DISP=OLD
OPTIONS NODATE NONUMBER;
****************

        2
***************;
DATA;
  LENGTH ACTIVITY $16;
  SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
* INSERT SELECTION CRITERIA;
  KEEP ACTIVITY LOCATION COMPANY DURATION RESP_NO R_OR_S DAY;
PROC SORT;
  BY COMPANY LOCATION ACTIVITY RESP_NO R_OR_S DAY;
PROC MEANS NOPRINT SUM N;
  BY COMPANY LOCATION ACTIVITY RESP_NO R_OR_S DAY;
  VAR DURATION;
  OUTPUT SUM=PERDAY N=N;
PROC MEANS NOPRINT MEAN STD SUM;
  BY COMPANY LOCATION ACTIVITY;
  VAR PERDAY N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  SUM=SUMTIME NUM_REC;
PROC PRINT;
  BY COMPANY LOCATION;
  FORMAT COMPANY COMPANYC. LOCATION LOCATN.;
  LABEL COMPANY=COMPANY LOCATION=LOCATION;
      TITLE 1 9 7 5   H U M A N  A C T I V I T I E S  P R O F I L E;
  TITLE3 AVERAGE TIME PER DAY ;
  VAR MINUTES STD_DEV NUM_REC;
      ID ACTIVITY;
```

Figure A-1. Program 3 Input

```
****************
        3
***************;
PROC FORMAT;
  VALUES REGIONA
  0,8=WEST
  1,6,7=NORTHCENTRAL
  2,9=NORTHEAST
  3,4,5=SOUTH;
DATA ;
  MERGE SASFILE.DIARY SASFILE.BACKGRND;
  BY RESP_NO;
  LENGTH REGIONAL $16;
  REGIONAL=PUT(REGION,REGIONA.);
* INSERT SELECTION CRITERIA;
      IF R_OR_S='R' AND DAY=1;
  IF LOCATION=7 OR LOCATION=8 OR (LOCATION=3 AND (ISR_IDST=11 OR ISR_IDS
T=51)) OR (LOCATION=1 AND ( PRIMARY=139 OR PRIMARY=162 OR PRIMARY=163 OR
 PRIMARY=164 OR PRIMARY=171 OR PRIMARY=192 OR PRIMARY=259 OR PRIMARY=807
));
      IF TRAFFIC=3;
  KEEP LOCATION DURATION REGIONAL RESP_NO R_OR_S;
PROC SORT;
  BY REGIONAL LOCATION RESP_NO R_OR_S ;
DATA;
  SET;
  BY REGIONAL LOCATION RESP_NO R_OR_S ;
  N=0;
  IF LAST.R_OR_S THEN N=N+1;
PROC MEANS NOPRINT MEAN STD N;
  BY REGIONAL LOCATION;
  VAR DURATION N;
  OUTPUT MEAN=MINUTES  STD=STD_DEV  N=NUM_REC  SUM=SUMTIME NUM_RESP;
PROC PRINT;
  BY REGIONAL;
  FORMAT COMPANY COMPANYC. LOCATION LOCATN.;
  LABEL COMPANY=COMPANY LOCATION=LOCATION;
      TITLE 1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E;
  TITLE3 AVERAGE TIME AT LOCATION OUT OF DOORS BY REGION;
  ID LOCATION;
  VAR MINUTES STD_DEV NUM_REC NUM_RESP;
```

Figure A-1 (Continued)

```
****************
      4
***************;
DATA WORK1;
      LENGTH PRIMARY 3 TIME 4;
      SET SASFILE.DIARY;
  ACTIVITY = PUT(PRIMARY,ACTIV.);
      KEEP ACTIVITY TBEGN TEND;
DATA WORK2;
      LENGTH PRIMARY 3 TIME 4;
      SET SASFILE2.DIARY;
  ACTIVITY=PUT(PRIMARY,ACTIV2_.);
      KEEP ACTIVITY TBEGN TEND;
DATA TICKTOC;
  SET WORK1 WORK2 ;;
      LABEL TIME='(OF DAY)';
      START=60*(INT(TBEGN/60)+1);
      END=60*INT(TEND/60);
      IF END GE START THEN DO TIC=START TO END BY 60;
         TIME = 60*TIC; OUTPUT; END;
      KEEP ACTIVITY TIME;
PROC FREQ;
      TABLES ACTIVITY*TIME/NOROW NOPERCENT NOFREQ;
      FORMAT TIME TIME5.;
      LABEL ACTIVITY=(PRIMARY);
      TITLE 1 9 7 5   A N D   1 9 6 5   H U M A N   A C T I V I T I E S
  P R O F I L E;
TITLE3 PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD;
```

Figure A-1 (Continued)

```
****************
     6
****************;
DATA;
      MERGE SASFILE.DIARY SASFILE.BACKGRND;
      BY RESP_NO;
* INSERT SELECTION CRITERIA;
      KEEP BEFORE AFTER;
      RETAIN BEFORE;
      IF FIRST.RESP_NO THEN BEFORE=.;
      AFTER=PRIMARY;
      IF AFTER=BEFORE THEN DELETE;
      IF BEFORE NE . THEN OUTPUT;
      BEFORE=AFTER; RETURN;
 * SELECT DESIRED ACTIVITIES;
 DATA;
   SET;
       IF (BEFORE GE 709 AND BEFORE LE 749) AND ( ( AFTER GE 752 AND
       AFTER LE 799) OR (AFTER GE 981 AND AFTER LE 989));
 PROC FORMAT;
   VALUES ACTIV3_
        709=SPORTS EVENTS
        719='MISC. SPECTACLES,EVENTS'
        729=MOVIES
        739=THEATRE
        749=MUSEUMS
        752=VISITING WITH OTHERS
        769=PARTY
        771=AT BAR
        772=DANCING
          789=OTHER EVE TS
        961=RELAXING
        982='THINKING,PLANNING,REFLECTING'
        983=DOING NOTHING
        989= OTHER PASSIVE LEISURE,
PROC FREQ;
      TABLES BEFORE*AFTER/NOPERCENT;
TITLE 1 9 7 5  H U M A N  A C T I V I T I E S  P R O F I L E;
TITLE3 PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY;
      TITLES  AFTER=SOCIAL ACTIVITIES,RESTING AND RELAXING   BEFORE=ATTE
NDING ENTERTAINMENT;
      LABEL BEFORE=ACTIVITY AFTER=ACTIVITY;
      FORMAT BEFORE AFTER ACTIV3_.;
//
```

Figure A-1 (Concluded)

Notice that for the 1965 data base, there is only the respondent and only one day, therefore the variables R_OR_S and DAY do not exist and must be dropped from the KEEP and BY statements. Similarly, if we are only considering the respondents in the 1975 data base, R_OR_S can be dropped; or if we are only considering the first day, DAY can be dropped. Time per day can be calculated for Module 3 also and has the same form, except LOCATION and ACTIVITY are interchanged in their positions on the various BY statements (as in the basic module, refer to Section 4.3.3). The output for this module is provided in Table A-1.

Example for Module 3

Module 3 was used, in this example, to obtain the average length of time people who live on high traffic streets spend performing an outdoor activity. To produce this table (A-2), it was necessary to examine the 1975 data base (respondents, first day) for those who lived on streets with heavy traffic (TRAFFIC=3). Only outside activities were desired and it was decided to create a separate table for each region (northeast, north central, south, west). The use of the TRAFFIC and REGION variables required the merging of the diary and background data sets. The subsetting IF statement is similar to the one used for the 1965 data base (in Table 5-3), except that the 1975 data base does not distinguish between inside and outside the home. Thus for activities at home (LOCATION=1), it was necessary to specify which values of PRIMARY (activity variable) corresponded to outside activities. In addition, due to the different coding schemes, the 1975 data base has no OCC_BRCH (occupational branch) variable, the ISR_IDST (Industry Branch) variable (which is the nearest equivalent and has been formatted to correlate with the OCC_BRCH variable; see listing of formats, Table B-10 in Appendix B). While seemingly involved, this process was straightforward.

The process of creating the tables for each region was more complex. Unlike PROC FREQ, PROC PRINT ignores formats when creating categories; thus it would normally create a separate table for each numeric value of the REGION variable, which would result in 10 tables (see Background Variables, Table B-2 in Appendix B). The solution to this is to convert REGION into a character variable whose values correspond to the four regions: west, south, northeast, north central.

Table A-1

```
                    1975  HUMAN  ACTIVITIES  PROFILE

                         AVERAGE TIME PER DAY

----------------------- COMPANY=ALONE   LOCATION=MISSING DATA -----------------------

          ACTIVITY              MINUTES     STD_DEV     NUM_REC

          ACTIVE  LEISURE        93.000      48.431          11
          ATTENDING  ENTER      124.571      54.662           7
          CHILD  CARE            77.250      84.005           5
          CONVERSATION           44.400      38.934          11
          EATING                 61.250      58.437          49
          HOBBIES               123.750     214.732          12
          INDOOR HOUSEWK         59.333      60.582          24
          MUSIC                 300.000        .              2
          NONE                    0.000        .              1
          ORGANIZATIONS         193.056     154.712          18
          OUTDOOR HOUSEWK       128.000      56.635           5
          PERSONAL CARE         260.652     451.930         961
          READING                57.500      58.374           6
          REST &  RELAXATN       45.222      63.085          30
          SHOPPING               42.818      39.242          12
          SLEEPING              286.140     204.276          62
          SOCIAL  ACTIVITY      203.688     139.189          17
          STUDY                  52.083     201.759          12
          TRAVEL                 28.300      29.904          10
          TV                    153.857     113.706          10
          WORK                  104.667      64.810           4

----------------------------- COMPANY=ALONE   LOCATION=HOME -----------------------------

          ACTIVITY              MINUTES     STD_DEV     NUM_REC

          ACTIVE  LEISURE        47.947      60.321         173
          ATTENDING  ENTER       49.375      64.111           9
          CHILD  CARE            64.707      63.807        1770
          CONVERSATION           46.219      42.872        1760
          EATING                 54.615      43.928        7004
          HOBBIES               108.698     100.248        1117
          INDOOR HOUSEWK        125.366     120.868       13855
          MUSIC                  66.602      70.170         438
          NONE                   30.000        .              1
          ORGANIZATIONS          75.522      74.770          79
          OUTDOOR HOUSEWK       118.477     119.695        1443
          PERSONAL CARE          49.682      47.904       10336
          READING                77.352      72.501        3371
          REST &  RELAXATV       75.449      82.500         859
          SHOPPING               44.461      47.745         116
          SLEEPING              503.207     142.751       12849
          SOCIAL  ACTIVITY       99.360      87.548         581
          STUDY                 125.827     105.317         202
          TRAVEL                 21.699      34.149         284
          TV                    152.747     120.931        5068
          WORK                  187.668     191.649         513
```

Since this table was created separately by both location and company, the output was somewhat large. Only the output for the company situation "Alone" has been included here.

Table A-1 (Continued)

```
             1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E

                                  AVERAGE TIME PER DAY

-------------------------- COMPANY=ALONE   LOCATION=AT PLACE OF WORK ------------------------------------

                     ACTIVITY              MINUTES     STD_DEV     NUM_REC

                     ACTIVE  LEISURE        40,000      37.639           4
                     CONVERSATION           16,610      10,950          45
                     EATING                 35,993      20,234         618
                     HOBBIES                35,333      25,859           7
                     INDOOR HOUSEWK         34,667      36,258           8
                     MUSIC                  30,000         .             1
                     ORGANIZATIONS          60,000      21,213           2
                     OUTDOOR HOUSEWK       188,333     161.735           4
                     PERSONAL CARE          28,182      36.397          44
                     READING                21,361      17,474          21
                     REST &  RELAXATN       25,000      30,414           3
                     SHOPPING               17,125      15,959           8
                     SLEEPING              220,591     167.780          26
                     SOCIAL  ACTIVITY       91,000      93.338           2
                     STUDY                  84,000      76,864           3
                     TRAVEL                 17,382      14,384          38
                     TV                     56,667      35.119           3
                     WORK                  363,770     203,629        4011

-------------------------- COMPANY=ALONE   LOCATION=OTHER'S HOME ---------------------------------------

                     ACTIVITY              MINUTES     STD_DEV     NUM_REC

                     ACTIVE  LEISURE       115,250     109.814          12
                     CHILD  CARE            55,067      76,431          70
                     CONVERSATION           28,048      45.861          22
                     EATING                 66,000      50.297         280
                     HOBBIES               140,300      75.371          44
                     INDOOR HOUSEWK         45,400      49,318          72
                     MUSIC                  48,571      44.166           8
                     NONE                   45,000         .             1
                     ORGANIZATIONS         135,545      58,963          12
                     OUTDOOR HOUSEWK        95,000     105,691          17
                     PERSONAL CARE          80,021     111.324         382
                     READING                72,054      67,102          43
                     REST &  RELAXATN       75,111      60,696          30
                     SHOPPING               34,160      33,410          29
                     SLEEPING              374,432     194,323         219
                     SOCIAL  ACTIVITY      118,204     104,338         712
                     STUDY                  96,500      61,518           2
                     TRAVEL                 19.217      15.524          25
                     TV                    108,104      80.298          97
                     WORK                   65,000      58,822           6
```

Table A-1 (Continued)

```
                    1975  HUMAN  ACTIVITIES  PROFILE

                           AVERAGE TIME PER DAY                      -

----------------------------- COMPANY=ALONE   LOCATION=RESTAUR-ANT,BAR --------------------------------

                  ACTIVITY              MINUTES     STD_DEV     NUM_REC

                  ACTIVE  LEISURE       170,000        .              1
                  CHILD  CARE            53,500      30,406           2
                  CONVERSATION           45,429      35,809          24
                  EATING                 56,012      44,803         727
                  HOBBIES                17,000        .              1
                  MUSIC                  19,000      14,933           3
                  ORGANIZATIONS         118,000      31,937           7
                  OUTDOOR HOUSEWK        30,000        .              1
                  PERSONAL CARE          37,167      26.157           7
                  READING                23,200       9,884           5
                  REST &  RELAXATN       28,500       2,121           2
                  SHOPPING               11,163      10.519          50
                  SLEEPING               30,000       0.000           2
                  SOCIAL  ACTIVITY      120,795     123,473          56
                  STUDY                  10,000        .              1
                  TRAVEL                 33,833      42.599          12
                  TV                    128,667     119.267           6
                  WORK                   66,571      91.584           8

----------------------------- COMPANY=ALONE   LOCATION=INDOOR  LEISURE --------------------------------

                  ACTIVITY              MINUTES     STD_DEV     NUM_REC

                  ACTIVE  LEISURE       113,759      65,987          31
                  ATTENDING  ENTER      147,173      60,175          57
                  CHILD  CARE            65,000        .              1
                  CONVERSATION           21,900      12,627          12
                  EATING                 42,214      2 ,083          15
                  HOBBIES               235,000     21 ,877           9
                  MUSIC                  20,000        .              1
                  ORGANIZATIONS         133,571     106,427          30
                  PERSONAL CARE          36,111      49,673          11
                  READING                15,000        .              1
                  REST &  RELAXATN       15,000        .              1
                  SHOPPING               93,600      45.192           5
                  SLEEPING              555,000     148,492           4
                  SOCIAL  ACTIVITY      154,200     198,466          12
                  STUDY                  73,000      73,634           7
                  WORK                   55,000        .              1
```

Table A-1 (Continued)

```
1975  HUMAN  ACTIVITIES  PROFILE

            AVERAGE TIME PER DAY

------------------------ COMPANY=ALONE   LOCATION=OUTDOOR LEISURE ----------------------------------------

             ACTIVITY             MINUTES     STD_DEV     NUM_REC

             ACTIVE  LEISURE      179,529     141.903        247
             ATTENDING  ENTER     140,610      76.372         46
             CHILD  CARE           49,188      33.851         19
             CONVERSATION          73,722      47.158         23
             EATING                55,700      54.680         43
             HOBBIES               83,758     108.671         40
             INDOOR HOUSEWK        57,958      58.238         88
             ORGANIZATIONS        236.700     203.826         32
             OUTDOOR HOUSEWK       77,400      38.292          6
             PERSONAL CARE         26.393      21.184         34
             READING               75,000      46.233          5
             REST &  RELAXATN      86.538      73.602         14
             SHOPPING              30,000        .             1
             SLEEPING             364,610     190.346         57
             SOCIAL  ACTIVITY     112.538     129.277         17
             TRAVEL                17.000      17.389         16
             TV                    50.000        .             1
             WORK                 123.000        .             2

------------------------ COMPANY=ALONE   LOCATION=IN      TRANSIT ----------------------------------------

             ACTIVITY             MINUTES     STD_DEV     NUM_REC

             ACTIVE  LEISURE       59,583      60.973         96
             ATTENDING  ENTER      27,500      24.749          2
             CHILD  CARE           65,438      78.366         16
             CONVERSATION          37,667      64.205          9
             EATING                37, 69      31.937         32
             HOBBIES               36,800      23.847          5
             INDOOR HOUSEWK        19,984      13.475         76
             MUSIC                 15,000        .             1
             ORGANIZATIONS        101,286      90.638          9
             OUTDOOR HOUSEWK       12,500      10.607          2
             PERSONAL CARE         37,150      59.941         20
             READING               45,857      18.623          7
             REST &  RELAXATN      76,000     102.650          9
             SHOPPING              56,264      78.278         98
             SLEEPING             297,000     226.097          6
             SOCIAL  ACTIVITY      61.143      66.747          7
             STUDY                 20,000        .             2
             TRAVEL                66,193      66.384      16805
             TV                   108.000      89.290          4
             WORK                 125,965     172.763        655
```

Table A-1 (Concluded)

```
1975  HUMAN  ACTIVITIES  PROFILE

                     AVERAGE TIME PER DAY

------------------------ COMPANY=ALONE   LOCATION=OTHER, PUB.BLD, ----------------------------------

          ACTIVITY              MINUTES     STD_DEV     NUM_REC

          ACTIVE  LEISURE       143,632     115.176          30
          ATTENDING  ENTER      121,154      75.417          33
          CHILD  CARE            44,169      83.769          66
          CONVERSATION           32,074      29.763          97
          EATING                 48,380      48,899         134
          HOBBIES                92,778      97,666          32
          INDOOR HOUSEWK         55.548      56.761          63
          MUSIC                 127,429     162,089          10
          ORGANIZATIONS         118,075      93,071         551
          OUTDOOR HOUSEWK        95.375     111,829          26
          PERSONAL CARE          65,473     110.630         290
          READING                64,600      54,862          28
          REST &  RELAXATN       93,519     102,189          34
          SHOPPING               58.543      60,444        2546
          SLEEPING              377,500     196.012         159
          SOCIAL  ACTIVITY      100,750     104,432          35
          STUDY                 144,026     117.231         123
          TRAVEL                 28.511      36.653         111
          TV                     86,667      76.309          32
          WORK                   89,725     117.909          60
```

Since this table was created separately by both location and company, the output was somewhat large. Only the output for the company situation "Alone" has been included here.

Table A-2

```
                        1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E
                            AVERAGE TIME AT LOCATION OUT OF DOORS BY REGION

------------------------------------------ REGIONAL=NORTHCENTRAL ------------------------------------------

                 LOCATION               MINUTES     STD_DEV     NUM_REC     NUM_RESP

                 HOME                      47.5      38.452           8            5
                 AT PLACE OF WORK         115.5     112.310          10            2
                 OUTDOOR LEISURE          157.5     116.673           2            2
                 IN       TRANSIT          17.7      19.825         210           35

------------------------------------------ REGIONAL=NORTHEAST ---------------------------------------------

                 LOCATION               MINUTES     STD_DEV     NUM_REC     NUM_RESP

                 HOME                   135.000     106.066           2            2
                 OUTDOOR LEISURE         41.250      52.500           4            3
                 IN       TRANSIT        19.802      19.656         116           24

------------------------------------------ REGIONAL=SOUTH -------------------------------------------------

                 LOCATION               MINUTES     STD_DEV     NUM_REC     NUM_RESP

                 HOME                   125.556     110.381           9            7
                 AT PLACE OF WORK       130.000     129.615           4            1
                 OUTDOOR LEISURE         86.667      81.445           3            2
                 IN       TRANSIT        18.459      16.932         157           33

------------------------------------------ REGIONAL=WEST --------------------------------------------------

                 LOCATION               MINUTES     STD_DEV     NUM_REC     NUM_RESP

                 HOME                   80.0000     34.6410           3            1
                 OUTDOOR LEISURE         4.0000           .           1            1
                 IN       TRANSIT       30.8246     53.1098          57           14
```

Created from the 1975 Data Base, respondent only, first day only.

This is done using the statement

REGIONAL = PUT (REGION, REGIONA.);

which converts the numeric variable REGION into the character variable REGIONAL according to format REGIONA. Thus the numbers 0, 8 are replaced with WEST; 1, 6, 7 by NORTHCENTRAL; 2, 9 by NORTHEAST; and 3, 4, 5 by SOUTH. Thus when PROC PRINT creates separate tables for each value of the variable REGIONAL, the four desired tables are created. The LENGTH statement ensures sufficient space for these longer character values (up to 16 characters). Note that the same problem exists in the normal form of Module 2 and is solved in the same way, by converting PRIMARY to a character variable with a PUT statement. Also REGIONAL was substituted for COMPANY and LOCATION wherever they appear in the module since it fulfills the same role (i.e., used to create the different tables according to its values). See Table A-2 for the output from this module.

Example for Module 4

In Module 4, it is desired to combine the 1975 and 1965 diary data. Unfortunately the variable PRIMARY (activity variable) is coded differently in each data set. However, by converting the numeric variable to a character variable in the fashion described above, we can get around this problem. Thus we can read in the 1975 data and convert PRIMARY according to format ACTIV to a variable with 20 character values (these are listed in Table B-6 under New Categories in Appendix B). Then we read in the 1965 data and convert this PRIMARY variable according to the format ACTIV2_ to a variable with the same 20 character values. The two data sets are now compatible and can be combined with a SET statement and the remainder of the program is the same as the basic Module 4 program (Section 4.3.4, main text). Notice that TBEGN and TEND must be kept since they are used to create the variable TIME in DATA TICKTOC. See Table A-3 for the output from this module.

Example for Module 6

Module 6 uses the 1975 data base to again illustrate how to create a new format which examines each 1975 category value individually (i.e., going to movies) rather than in the usual combined format used in this analysis (i.e., Social Activities). This module also illustrates how to use different activities for the

1975 AND 1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	TOTAL
	0.02	0.01	0.01	0.00	0.01	0.01	0.00	0.01	
8	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.01	
ACTIVE LEISURE	0.20	0.12	0.07	0.09	0.09	0.17	0.40	0.45	
ATTENDING ENTER	0.14	0.07	0.01	0.01	0.01	0.00	0.02	0.04	
CHILD CARE	0.17	0.17	0.15	0.12	0.15	0.39	1.63	3.43	
CONVERSATION	0.12	0.07	0.11	0.06	0.04	0.14	0.54	0.75	
EATING	0.52	0.45	0.34	0.32	0.57	2.03	6.69	8.97	
HOBBIES	0.46	0.29	0.14	0.07	0.15	0.19	0.37	0.64	
INDOOR HOUSEWK	0.39	0.16	0.19	0.21	0.45	2.37	6.49	11.79	
MUSIC	0.16	0.10	0.09	0.05	0.10	0.16	0.27	0.32	
NONE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ORGANIZATIONS	0.11	0.06	0.04	0.01	0.00	0.05	0.09	0.50	
OUTDOOR HOUSEWK	0.04	0.05	0.01	0.01	0.02	0.09	0.31	1.00	
PERSONAL CARE	1.81	1.72	1.56	1.39	2.10	4.82	8.71	8.60	
READING	1.02	0.51	0.26	0.25	0.17	0.60	1.57	2.49	
REST & RELAXATN	0.09	0.06	0.06	0.12	0.12	0.25	0.39	0.76	
SHOPPING	0.00	0.00	0.00	0.00	0.00	0.02	0.09	0.44	
SLEEPING	85.08	90.36	93.60	94.92	93.62	84.02	59.80	33.56	
SOCIAL ACTIVITY	2.23	1.47	0.78	0.46	0.17	0.07	0.19	0.35	
STUDY	0.14	0.09	0.04	0.01	0.01	0.06	0.14	0.39	
TRAVEL	0.34	0.65	0.45	0.22	0.41	1.59	4.46	6.62	
TV	4.27	1.51	0.42	0.10	0.04	0.09	0.56	1.27	
WORK	2.63	2.04	1.67	1.54	1.74	2.88	7.30	17.63	
TOTAL	8027	8029	8029	8029	8029	8029	8029	8025	192321

(CONTINUED)

The activity designated 8 from the 1965 Data Base should have been combined with Work. The first line, not given any activity label, should also be combined with

Table A-3 (Continued)

1975 AND 1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY) COL PCT	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	TOTAL
See first page	0.01	0.02	0.02	0.00	0.00	0.04	0.05	0.04	
See first page 8	0.00	0.04	0.05	0.06	0.07	0.11	0.14	0.14	
ACTIVE LEISURE	0.74	1.26	1.57	1.60	1.88	2.13	2.26	2.21	
ATTENDING ENTER	0.09	0.16	0.30	0.37	0.60	0.95	1.04	0.89	
CHILD CARE	2.48	1.89	1.42	1.50	1.42	1.51	1.67	2.05	
CONVERSATION	1.02	1.55	1.50	1.62	1.41	1.49	1.45	2.20	
EATING	7.70	4.90	3.27	11.07	16.09	5.49	2.71	2.57	
HOBBIES	0.98	1.61	1.85	1.65	1.54	2.12	2.72	2.58	
INDOOR HOUSEWK	15.07	15.80	15.33	14.85	12.34	10.84	10.31	11.01	
MUSIC	0.26	0.34	0.34	0.32	0.44	0.47	0.56	0.50	
NONE	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
ORGANIZATIONS	1.20	3.86	5.39	4.63	1.65	1.51	1.32	1.34	
OUTDOOR HOUSEWK	2.23	3.34	4.08	3.68	3.24	3.97	4.06	3.91	
PERSONAL CARE	8.48	7.04	5.79	5.41	5.08	4.92	5.03	5.27	
READING	3.85	3.28	3.18	2.66	2.55	2.56	2.82	3.23	
REST & RELAXATN	0.93	1.11	1.25	1.28	1.36	1.73	1.82	2.01	
SHOPPING	1.55	3.65	5.49	4.64	4.72	6.04	5.55	5.21	
SLEEPING	17.14	8.87	5.39	3.88	4.29	6.09	5.98	5.33	
SOCIAL ACTIVITY	0.96	1.81	2.91	3.16	4.47	5.59	6.24	7.06	
STUDY	0.91	1.13	1.22	1.10	0.95	1.07	0.95	0.81	
TRAVEL	6.12	6.14	6.12	7.58	8.32	7.15	7.61	9.09	
TV	1.46	2.83	3.36	4.20	5.37	6.70	7.41	8.08	
WORK	26.32	29.35	30.17	24.74	22.21	27.51	28.29	24.48	
TOTAL	8023	8023	8017	8019	8013	8013	8011	8008	192321

(CONTINUED)

Table A-3 (Concluded)

1975 AND 1965 HUMAN ACTIVITIES PROFILE

PERCENT OF PEOPLE PERFORMING ACTIVITY DURING EACH TIME PERIOD

TABLE OF ACTIVITY BY TIME

ACTIVITY (PRIMARY) TIME (OF DAY)

COL PCT	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	TOTAL
See first page	0.04	0.05	0.06	0.08	0.08	0.06	0.19	0.09	
See first page	0.09	0.06	0.07	0.10	0.25	0.19	0.14	0.09	
ACTIVE LEISURE	1.75	1.21	1.46	1.41	1.28	0.95	0.61	0.20	
ATTENDING ENTER	0.67	0.57	0.84	1.59	2.00	1.64	1.08	0.46	
CHILD CARE	1.96	1.97	2.67	3.19	2.84	1.53	0.60	0.29	
CONVERSATION	2.44	2.50	2.49	2.20	2.62	2.19	1.75	0.81	
EATING	6.31	18.27	15.57	7.60	4.58	3.04	1.91	1.28	
HOBBIES	2.26	1.95	1.91	3.03	3.14	2.77	1.63	0.84	
INDOOR HOUSEWK	14.97	16.47	12.27	6.90	4.53	3.29	2.09	0.70	
MUSIC	0.56	0.42	0.60	0.76	0.91	0.86	0.70	0.36	
NONE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ORGANIZATIONS	1.01	1.15	2.30	3.88	2.93	1.66	0.75	0.33	
OUTDOOR HOUSEWK	3.04	2.37	1.80	1.24	0.60	0.21	0.13	0.05	
PERSONAL CARE	6.63	7.28	7.09	6.12	5.42	6.53	6.24	5.10	
READING	3.84	3.21	3.74	4.73	5.17	5.52	3.97	1.64	
REST & RELAXATN	2.34	1.86	1.64	1.55	1.29	1.09	0.59	0.35	
SHOPPING	3.77	2.30	1.95	2.08	1.41	0.20	0.08	0.04	
SLEEPING	4.45	3.45	3.05	3.85	6.73	17.90	44.31	72.18	
SOCIAL ACTIVITY	6.77	6.27	7.74	10.21	9.53	7.87	5.54	3.54	
STUDY	0.56	0.46	0.77	1.16	1.13	0.78	0.48	0.24	
TRAVEL	11.69	9.37	7.21	5.45	4.58	3.60	2.50	1.55	
TV	8.34	10.26	18.74	27.53	34.17	34.23	21.21	7.32	
WORK	16.51	8.53	6.02	5.34	4.82	3.89	3.52	2.54	

"before" activities than for the "after" activities. As an example, the cases where attending entertainment was followed by social activity or rest or relaxation were examined. Thus, it was necessary to limit the BEFORE activities considered to those in the categories of attending entertainment and the AFTER activities to the categories of social activity and rest or relaxation. However, a subsetting IF statement cannot be placed in the DATA step creating these variables without interfering in this process (since the IF statement, when its expression is not true, causes the computer to go on to the next observation, skipping subsequent statements). Therefore, a second DATA step is added, the data set created by the first DATA step is set and the data selection is done here. Furthermore the variables BEFORE and AFTER are reformatted so that the individual activity categories may be distinguished. See Table A-4 for the output from this module.

These examples should be helpful in showing how certain useful modifications may be made to the modules and, hopefully, will suggest to the reader other possible modifications that can be made. These or similar changes can be made to all of the modules and require only an intelligent application of the information in Section 4.0. For more complex modifications, the reader is again referred to the SAS User's Guide.[1]

Table A-4

```
          1 9 7 5   H U M A N   A C T I V I T I E S   P R O F I L E
        PERCENT OF TIME ACTIVITIES OCCURED BEFORE/AFTER ANOTHER ACTIVITY

AFTER =SOCIAL ACTIVITIES,RESTING AND RELAXING  BEFORE =ATTENDING ENTERTAINMENT

                           TABLE OF BEFORE BY AFTER

  BEFORE     ACTIVITY   AFTER     ACTIVITY

  FREQUENCY        |
   ROW PCT         |
   COL PCT         |VISITING|AT BAR  |OTHER EV|RELAXING|OTHER PA|
                   | WITH OT|        |ENTS    |        |SSIVE LE|  TOTAL
  -----------------+--------+--------+--------+--------+--------+
  SPORTS EVENTS    |      0 |      0 |      1 |      1 |      0 |      2
                   |   0.00 |   0.00 |  50.00 |  50.00 |   0.00 |
                   |   0.00 |   0.00 |  33.33 | 100.00 |   0.00 |
  -----------------+--------+--------+--------+--------+--------+
  MISC. SPECTACLES |      1 |      0 |      0 |      0 |      1 |      2
                   |  50.00 |   0.00 |   0.00 |   0.00 |  50.00 |
                   | 100.00 |   0.00 |   0.00 |   0.00 | 100.00 |
  -----------------+--------+--------+--------+--------+--------+
  THEATRE          |      0 |      0 |      2 |      0 |      0 |      2
                   |   0.00 |   0.00 | 100.00 |   0.00 |   0.00 |
                   |   0.00 |   0.00 |  66.67 |   0.00 |   0.00 |
  -----------------+--------+--------+--------+--------+--------+
  MUSEUMS          |      0 |      1 |      0 |      0 |      0 |      1
                   |   0.00 | 100.00 |   0.00 |   0.00 |   0.00 |
                   |   0.00 | 100.00 |   0.00 |   0.00 |   0.00 |
  -----------------+--------+--------+--------+--------+--------+
  TOTAL                   1        1        3        1        1        7
```

A.2 How to Use SAS on an Interactive System

It may be desired to run the program over a slow speed typewriter terminal. The program can be run this way using Wylbur (an editing program) and TSO (a time-sharing language) on the WCC IBM 370 computer. The SAS portion of the program remains the same as with a batch job; however, TSO commands must be used to load the SAS compiler, call the data sets, and specify where the results are outputted. The program can be run in two ways:

1. One can prepare the program on the low speed terminal using Wylbur and then submit the job for batch processing. Results will be printed on a line printer after the computer has processed the job. In this case, the entire program (including JCL statements) would be entered, then edited and submitted, using Wylbur commands.
2. One can enter the program commands interactively. The commands can be executed immediately and the results printed at the terminal. Each SAS statement is checked for errors as it is entered and error messages are printed out immediately. JCL statements must be replaced by their TSO equivalents, e.g., "SAS" replaces "// EXEC SAS". SAS begins executing PROC steps when it encounters a "RUN;" statement.

Based on this manual, utilizing the interactive system to prepare the program and using batch processing to execute the program would be the preferred method. However, an experienced programmer would have no difficulty entering the program interactively.

APPENDIX B

Program Variables

Due to the large number of subdivisions in the 1965 and 1975 variables and the incompatibility of many of them, for this present analysis, many of the original variable subdivisions have been rearranged (formatted) into a smaller number of broader groups. This produces a more manageable data base with more compatible variables, and enables the user to evaluate the more general trends in peoples' activity profiles. The original, more detailed subdivisions of the variables, however, has also been retained on the data base so that interesting trends within these subdivisions can be analyzed, as well, by referring to the original values or, if desired, the original values can be rearranged into formats different than those used in this analysis.

The program variables consist of the background variables (used in data sets SASFILE. BACKGROUND, SASFILE2. BACKGROUND), and the activity, location, and company variable used in the diary data sets (SASFILE.DIARY, SASFILE2.DIARY). The definition of the variables, their variable names, and values are contained in this section, as well as their formats (obtained from SASLIB.) which are included at the end of this section.

Table B-1

1965 Data Base Background Variables

Variable Name	Variable Description and Values
SEX_OF_R	Sex of Respondent 1 = Male 2 = Female
AGE_OF_R	Age of Respondent 1 = Under 30 2 = 30-39 years 3 = 40-50 years 4 = over 50 years
WORK_STS	Work Status: 1 = Housewives 2 = Employed women 3 = Employed men 4 = Students 5 = Nonworkers
OCCUPATN	Occupational skills: 0 = Not working 1 = Unskilled 2, 8 = Skilled, semi-skilled 3 = Technical 4 = Lower white collar 5 = Upper white collar 6 = Professional 7 = Farmer

OCC_BRCH Industry:

0 = Agriculture
1 = Extractive industry
2 = Manufacturing
3 = Construction
4 = Technical public service
5 = Administrative public service
6 = Finance, real estate
7 = Trade, retail
8 = Education, science, culture
9 = Other

MARITLST Marital status:

0 = Married
1 = Single
2 = Other

NO_CHILD Number of children:

0 = No children
1 = At least 1 child under 4 years
2 = All children over 4 years old

ECO_CHAR Ecological characteristics:

3 = Urban
0, 1 = Industrial, commercial
2, 4 = Suburban
5, 6 = Rural

CAR Car owner:

0 = Car owner
1 = Non-car owner

DAY Day of week:

1 = Monday, etc.
7 = Sunday

Table B-2

1975 Data Base Background Variables

<table>
<tr><th>Variable Name</th><th>Variable Description and Values</th></tr>
<tr><td>RESP_NO</td><td>Respondent ID number</td></tr>
<tr><td>REGION</td><td>Major geographic region and Standard Primary Area Size:
<table>
<tr><th>12 Largest Areas</th><th>62 Sample Areas</th><th>Region</th></tr>
<tr><td>0</td><td>8</td><td>= West</td></tr>
<tr><td>1</td><td>6, 7</td><td>= Northcentral</td></tr>
<tr><td>2</td><td>9</td><td>= Northeast</td></tr>
<tr><td>3</td><td>4, 5</td><td>= South</td></tr>
</table></td></tr>
<tr><td>SEX_OF_R</td><td>Sex of respondent:
1 = Male
2 = Female</td></tr>
<tr><td>AGE_OF_R</td><td>Age of respondent:
1 = Under 30
2 = 30-39 years
3 = 40-50 years
4 = Over 50 years</td></tr>
<tr><td>WORK_STS</td><td>Work Status:
1 = Housewives
2 = Employed Women
3 = Employed Men
4 = Student (full-time or part-time)
5 = Non-Worker (unemployed, retired/disabled, temporarily laid off)</td></tr>
<tr><td>OCCUPATN</td><td>What is your main occupation?
(28 occupational codes reduced from 1970 census list of 441 occupations, which are also included as variable CENSUSOC, see list of occupation codes, Table B-3, at end of section.)</td></tr>
</table>

CENSUSOC	1970 Census Bureau Occupation Codes - 441 occupations coded 001-995. See list of occupation codes, Table B-3.
ISR_IDST	Industry Code - 33 industries coded 00-99. See listing of industrial codes, Table B-4, at end of section.
MARITLST	Marital Status: 0 = Married 1 = Single 2 = Other
NO_CHILD	Number of Children: 0 = No children 1 = At least one child under 4 years 2 = All children over 4 years old
NOCHINHU	Number of respondent's children living in household: 1-7 = Actual number one through seven 8 = Eight or more 9 = No answer
AGE_OF_Y	Age of respondent's youngest child: (actual age 1-17 coded) 99 = No answer 00 = Inappropriate
AGE_OF_0	Age of respondent's oldest child: (actual age 1-17 coded) 99 = No answer 00 = Inappropriate
M_0_2	Number of male children age 0-2 years: 1-7 = Actual number 1-7 was coded 8 = Eight or more 9 = No answer 0 = None, inappropriate
F_0_2	Number of female children age 0-2 years
M_3_4	Number of male children age 3-4 years

F_3_4	Number of female children age 3-4 years
M_5_12	Number of male children age 5-12
F_5_12	Number of female children age 5-12
M_13_17	Number of male children age 13-17
F_13_17	Number of female children age 13-17 (all answers for above coded same as M_0_2)
URBNIZTN	Degree of urbanization based on the population density: 1, 2 = Central cities of the 12 largest SMSA's (self-representing) 3, 4 = Suburbs of the 12 self-representing primary areas 7 = Non-self-representing primary areas which do not include a central city of an SMSA
URBNCITY	Identifies SMSA category: 1 = SMSA's: Baltimore Detroit Pittsburgh Boston Los Angeles St. Louis Chicago N.Y.C. San Francisco Cleveland Philadelphia Washington, D.C. 2 = SMSA: The remainder of the self-representing primary area exclusive of places with population of 100,000 or more 3 = SMSA: Cities of 100,000 population or more exclusive of those listed in code 1 4 = SMSA: Places 50,000-99,999 5 = SMSA and Non-SMSA: Places 10,000-49,999 6 = SMSA and Non-SMSA: Places 2,500-9,999, plus other urbanized areas in SMSA's 7 = SMSA: Remainder of SMSA primary areas after everything above has been removed 8 = Non-SMSA: Remainder of Non-SMSA primary area after everything above has been removed

CAT_REGN

Input Code		Output Code
0, 8	=	West
1, 6, 7	=	Northcentral
2, 9	=	Northeast
3, 4, 5	=	South

STRUCTYP

Type of structure in which family lives:

01 = Trailer
02 = Detached single family house
03 = 2-family house, 2 units side by side
04 = 2-family house, 2 units one above other
05 = Detached 3-4 family house
06 = Row house (3 or more units in attached row)
07 = Apartment house (5 or more units, 3 or less stories)
08 = Apartment house (5 or more units, 4 or more stories)
09 = Other
11 = Apartment house (5 or more units, 4 or more stories)
99 = No answer

TRAFFIC

Traffic on respondent's street is:

1 = Almost none
2 = Moderate
3 = Heavy (hard to cross street without waiting)
9 = No answer

TEMP

High temperature on diary day:

0 = Below 25 degrees
1 = 25-34 degrees
2 = 35-44 degrees
3 = 45-54 degrees
4 = 55-64 degrees
5 = 65-74 degrees
6 = 75-84 degrees
7 = 85-94 degrees
8 = 95 + degrees
9 = No answer,don't know

WEATHER

How long did it rain or snow on diary day?

0 = None
1 = 1-15 minutes
2 = 16-60 minutes
3 = 1-3 hours
4 = 3-8 hours
5 = Over 8 hours
8 = Don't know
9 = No answer

YOUWORK

Have you (female respondent or wife) ever done any work for pay since you first married?

1 = Yes
5 = No
8 = Don't know
9 = No answer
0 = Inappropriate

HOWMUCH

How many years have you (female respondent or wife) worked full time since first married?
(actual number was coded)

97 = Has worked but never full time
98 = Don't know
99 = No answer
00 = Inappropriate

RES_SCHL

What was the highest grade of school you completed?

00 = None
01 = One
02 = Sixteen
17 = Seventeen years or more
98 = Don't know
99 = No answer

ED_SUMRY

Summary of respondent's education:

01 = 8 grades or less, no further schooling
02 = 8 grades or less, plus nonacademic training

03 = 9-11 grades, no further schooling
04 = 9-11 grades, plus non-academic training
05 = High school diploma, no further training
06 = High school diploma, plus non-academic training
07 = Some college, but no degree
08 = Junior or community college level degrees
09 = B.A. level degree
10 = Advanced degree, including L.L.B.
98 = Don't know
99 = No answer

HRS_WORK How many hours do you work a week?
(actual number coded)
98 = Ninety-eight hours or more
99 = No answer, don't know
00 = Inappropriate

INCOME How much did you earn from your job in 1974, before taxes?
01 = under $2000
02 = $2000-2999
03 = $3000-3999
04 = $4000-4999
05 = $5000-5999
06 = $6000-7499
07 = $7500-8999
08 = $9000-999
09 = $10,000-10,999
10 = $11,000-12,499
11 = $12,500-14,999
12 = $15,000-17,499
13 = $17,500-19,999
14 = $20,000-22,499
15 = $22,500-24,999
16 = $25,000-29,999
17 = $30,000-34,999
18 = $35,000 and over
98 = Don't know
99 = No answer
00 = Inappropriate

TOT_INC

How much did you and your family receive in 1974 from all sources?
(same as codes used for INCOME)

OWN_RENT

Do you own or rent home?

1 = Own or is buying
2 = Pays rent
3 = Neither owns or pays rent
4 = Both owns and rents
9 = No answer
0 = Inappropriate

HOMEVALU

Present value of home in today's market:

00001-99994 = Actual value coded
99995 = 99,995 or more
99998 = Don't know
99999 = No answer
00000 = Inappropriate

ETHNICGP

Racial or ethnic group of respondent:

1 = Caucasian
2 = Black
3 = Chicano, Puerto Rican, Mexican, Sp. American
4 = American Indian
5 = Oriental
7 = Other
9 = No answer

NOGE18HU

Number of persons age 18 or older in household:

1-7 = One through seven
8 = Eight or more
9 = No answer

NOGE18FU

Number of persons age 18 or older in family unit:

1-7 = One through seven
8 = Eight or more
9 = No answer

NOLTI8HU	Number of persons age 17 or under in household: 0 = None 1-7 = Actual number - one through seven 8 = Eight or more 9 = No answer
NOLTI8FU	Number of persons age 17 or under in family unit: 0 = None 1-7 = Actual number one through seven 8 = Eight or more 9 = No answer
DISHWASH	Does your family have a dishwasher? 0 = None 1-6 = Actual number one through six 7 = Seven or more 8 = Don't know 9 = No answer
DRYER	Does your family have a dryer?
FREEZER	Does your family have a freezer?
MICROVEN	Does your family have a microwave oven?
CALC	Does your family have a calculator?
COLOR_TV	Does your family have a color TV?
B_W_TV	Does your family have a black and white TV? (all responses to above coded the same as DISHWASH)
CABLE_TV	Are any of your TV's hooked up to Cable TV? 1 = Yes 5 = No 8 = Don't know 0 = Inappropriate, no televisions

LIF_STS How do you feel about life as a whole?

1 = Terrible
2 = Unhappy
3 = Mostly dissatisfied
4 = Mixed
5 = Mostly satisfied
6 = Pleased
7 = Delighted

RESP_ED
PANEL_WT
CENSUSWT
SUP_R_WT

These variables are not applicable to this data base.

Table B-3

Values for Occupation Variables

The occupation and industry variables have been categorized differently for the 1965 and 1975 surveys, with different values assigned to them. In order to facilitate comparisons or combinations of data, for the present analysis, the 1975 OCCUPATN and the 1965 OCCUPATN values have been given similar formats so that they appear identical in the output. The correlation between the 1965 and 1975 categories however is a gross one and care should be exercised when combining them. The original, more detailed, 1975 variable values have been retained so that they can be referred to if desired. The formats for these variables are provided at the end of this section.

1965 Occupations (OCCUPATN)	1975 (OCCUPATN)		1975 (CENSUSOC)*
0 = Not Working	96	Students	
	97	Housewives	
	98	No Occupation	
1 = Unskilled	70	Unskilled Laborers	(740-785)
	75	Other Service Workers	(910-965, except 960-965 when work for government)
2,8 = Skilled, Semi-skilled	51	Craftsmen	(401-440, 442-580)
	52	Protective Workers	(960-965 when work for government)
	55	Armed Forces	
	61	Truck Drivers	(701-715)
	62	Manual Workers	(601-695, 740-785, 821-824)
3 = Technical	50	Foremen	(441)
	16	Technicians	(003-005, 025, 055, 080-085, 150-173, 183, 191)
4 = Lower White Collar	40	Secretaries, Stenographers	(370-372, 376, 391)
	41	Other Clerical Workers	(301-364, 374-375, 381-390, 392-395)
	45	Sales	(260-280)
5 = Upper White Collar	20	Managers, Officials	(201-245)
	31	Managers, Officials Self-employed	

6	= Professional	10	Doctors	(062, 065)
		11	Other Medical Workers	(061, 063, 064, 071-076)
		12	Accountants, Auditors	(001)
		13	Teachers	(141-145)
		14	Professors, Librarians	(032-036, 091-096, 102-140)
		15	Architects, Chemists, Others	(002, 006-023, 042-054)
		17	Public Advisors	(024, 026, 056, 086, 090, 100-101, 184, 192)
7	= Farmers	80	Farm Owners	(801-802)
		71	Farm Laborers	(821-824)

*For definition of the 3-digit values for the variable CENSUSOC, see U. S. Bureau of Census, "Classified Index of Occupations," Washington, D. C., GPO, 1970.

Table B-4

Values for Industry Variables

1965 Subdivisions (OCC_BRCH)	1975 Subdivisions (ISR_IDST)*
0 = Agriculture	11
1 = Extractive Industry	21
2 = Manufacturing	30-34, 40-46, 49
4 = Technical Public Service	56, 86, 55, 57
5 = Administrative Public Service	91, 92
6 = Finance, Real Estate	71, 82
7 = Trade and Retail	61, 62, 69
8 = Education, Science, Culture	87, 84 88, 85
9 = Other	51, 81, 83

*The definition of these values are found in Table B-5.

Table B-5

Values for 1975 Industry Variable (ISR_IDST)

(Numbers in parentheses represent 1970 Census Industry*)

11. Agriculture, Forestry and Fishing (A, 017-028)

21. Mining and Extraction (047-057)

MANUFACTURING DURABLES

30. Metal industries (139-169)
31. Machinery, including electrical (177-209)
32. Motor vehicles and other transportation equipment (219-238)
33. Other durables (107-138, 239-259)
34. Durables, NA what (No answer to question regarding what kind)

MANUFACTURING NONDURABLES

40. Food and kindred products (268-298)
41. Tobacco manufacturing (299)
42. Textile mill products, apparel and other fabricated textile products, shoes (307-327; 389)
43. Paper and allied products (328-337)
44. Chemical and allied products, petroleum and coal products, rubber and miscellaneous plastic products (347-387)
45. Other nondurables (388, 397)
46. Nondurables, NA what
49. Manufacturing, NA whether durable or nondurable

51. Construction (067-077, B)

55. Transportation (D, 407-429)

56. Communication (447-449)

57. Other Public Utilities (467-479)

61. Retail Trade (607-698)

62. Wholesale Trade (507-588)

69. Trade, NA whether wholesale or retail

71. Finance, Insurance, and Real Estate (707-718)

81. Repair Service (757-759)

82. Business Services (727-749)

83. Personal Services (H, 769-798)

84. Amusement, Recreation and Related Services (807-809)

85. Printing, Publishing and Allied Services (338-389)

86. Medical and Dental and Health Services, whether public or private (828-848)

87. Educational Services, whether public or private (K, 857-868)

88. Professional and Related Services other than medical or educational (849, 869)

91. Armed Services

92. Government, other than medical or educational services; NA whether other

99. No answer, don't know

*Taken from U. S. Bureau of Census, "Classified Index of Industries," Washington, D.C., GPO, 1970.

Table B-6

Values for Activity Variable

The original 1965 and 1975 values for the ACTIVITY variable have been regrouped into 20 new activity categories for this analysis. The formats for these new subdivisions are provided at the end of this section. The original, more detailed subdivisions, however, can still be accessed and used in the analyses by creating a new format. This procedure is described in Section 5.0.

New Categories	1975 Original Subdivisions (173)		1965 Original Subdivisions (96)	
Work	011	Normal work	00	Regular work
	012	Work at home	01	Work at home
	059	Second job	02	Overtime
	078	Before and/or after work	04	Waiting on delays
	089	Coffee breaks	05	Second job
	079	Other work related	07	At work, other
			08	Work breaks
Travel	097	Travel: job search	03	Travel for job
	098	Travel: interrupted	09	Travel to job
	099	Travel to work	29	Travel with child
	299	Travel: child care	39	Travel service
	399	Travel: services	49	Travel, personel
	498	Travel: helping	59	Travel, study
	599	Travel: education	79	Travel, pastime
	698	Travel: organization helping	89	Travel, leisure
	699	Travel: organization	99	Travel, leisure
	799	Travel: social		
	817	Pleasure drives		
	825	Motorcycling		
	899	Travel: sports		
	999	Travel: leisure		
Housework, indoors	109	Meal preparation	10	Prepare food
	119	Meal cleanup	11	Meal cleanup
	149	Laundry & clothes care	12	Clean house
	129	Indoor cleaning	14	Laundry, ironing
	161	Repairs, maintenance	15	Clothes upkeep
	173	Care of houseplants	16	Other upkeep
	191	Other, indoor	18	Heat, water upkeep
	193	Household paperwork	19	Other duties
	197	Other household	42	Care to adults
	172	Pet care		
	412	Medical care to adults in household		
	421	Nonmedical care to adults in household		
Housework, outdoors	171	Gardening	13	Outdoor chores
	139	Outdoors cleaning	17	Gardening, animal care
	162	Repairs, maintenance		
	164	Home improvements		
	192	Other outdoor		
	163	Car care & maintenance		

New Categories	1975 Original Subdivisions (173)		1965 Original Subdivisions (96)	
Shopping & Obtaining services	301	Groceries		
	311	Durable household goods	30	Marketing
	312	House, apartment	31	Shopping
	302	Other shopping goods	34	Administrative service
	329	Personal care		
	339	Medical care	35	Repair service
	341	Financial services	36	Waiting in line
	342	Other government services	37	Other services
	351	Auto services	33	Medical care
	352	Clothes repair & cleaning		
	353	Appliance repair		
	354	Other HH repair services		
	379	Other services		
	389	Errands		
	022	Job search		
	023	Unemployment benefit		
	024	Welfare, food stamps		
Child care	209	Baby care		
	218	Child care mixed	20	Baby care
	219	Child care	21	Child care
	221	Helping/teaching	26	Child health
	222	Helping with homework	22	Help on homework
	249	Indoor playing	24	Indoor playing
	259	Outdoor playing	25	Outdoor playing
	269	Medical care	27	Other, babysit
	278	Babysitting		
	279	Other child care		
Personal Care	409	Washing & dressing		
	411	Medical care	32	Personal care
	483	Sex	40	Personal hygiene
	482	Personal, private	41	Personal medical
	489	Other personal	48	Private, other
	422	Help & care to relatives		
	423	Help & care to neighbors		
	424	Help & care to others		
	652	Individual religious practice		
Eating	439	Meals at home	06	Meals at work
	449	Meals away from home	43	Meals, snacks
	069	Lunch at workplace	44	Restaurant meals
Sleeping	459	Night sleep	45	Night sleep
	469	Naps & resting	46	Daytime sleep

New Categories	1975 Original Subdivisions (173)		1965 Original Subdivisions (96)	
Study	509	Student full time	50	Attend school
	519	Other classes	51	Other classes
	549	Homework	52	Special lecture
	569	Other education	53	Political courses
			54	Homework
			55	Read to learn
			56	Other study
Organizations	631	Attending meetings: Vol/help	64	Religious organizations
	632	Other work: Vol/help	65	Religious practice
	633	Fund raising activities: Vol/help	60	Union, politics
	634	Direct help: Vol/help	61	Work as officer
			62	Other participation
	635	Other activities: Vol/help	63	Civic activities
	651	Attending services: religious	66	Factory council
	641	Meetings: religious helping groups	67	Misc. organization
	642	Other activities: religious helping groups	68	Other organization
	643	Meetings: other church groups		
	644	Other activities, other church groups		
	601	Meetings; professional/union		
	602	Other activities; professional/union		
	671	Meetings, family org.		
	672	Other activities, family		
	661	Meetings, fraternal		
	662	Other activities, fraternal		
	621	Meetings, political/citizen		
	622	Other activities, political/citizen		
	611	Meetings; identify special interest org.		
	612	Other activities		
	689	Other organizations		
Attending Entertainment	709	Sports events	70	Sports events
	729	Movies	71	Mass culture
	739	Theatre	73	Theatre
	749	Museums	74	Museums
	719	Misc. spectacles/events	72	Movies

New Categories	1975 Original Subdivisions (173)		1965 Original Subdivisions (96)	
Social Activities	752	Visiting with others	75	Visiting with friends
	769	Party	76	Party meals
	771	At bar	77	Cafe, pubs
	772	Dancing	78	Other social
	789	Other events	87	Parlor games
Sports and Active Leisure	888	Classes for activity	90	Active sports
	801	Football, basketball, baseball, hockey	81	Fishing, hiking
	802	Tennis, squash, raquetball	82	Taking a walk
	803	Golf		
	804	Swimming, waterskiing		
	805	Skiing, skating		
	806	Bowling, pool, ping pong, pinball		
	807	Frisbee, catch		
	808	Exercises, yoga		
	811	Hunting		
	812	Fishing		
	813	Boating, sailing, canoeing		
	814	Camping, at the beach		
	815	Snowmobiling, dunebuggying		
	816	Gliding, flying, leaping off high buildings		
	818	Picnicking		
	821	Walking for pleasure		
	822	Hiking		
	823	Jogging		
	824	Bicycling		
	826	Horseback riding		
Hobbies	832	Working on cars, customizing, painting		
	831	Photography	83	Ladies' hobbies
	833	Working on leisure time equipment	85	Art work
			88	Other pastimes
	834	Collections, scrapbooks		
	835	Carpentry & woodworking		
	842	Knitting, needlework		
	843	Sewing		
	844	Care of animals, livestock		
	851	Sculpture, painting, potting		
	852	Literature, poetry, writing		
	871	Playing card games		
	872	Playing social games		
	874	Puzzles		
	863	Acting, rehearsals		
	841	Preserving foodstuffs		
	889	Other active leisure		
	864	Nonsocial dancing, ballet, body movement		

New Categories	1975 Original Subdivisions (173)		1965 Original Subdivisions (96)	
Music	929	Records, tapes, listening to others play	86	Making music
	861	Playing instrument, whistling	92	Playing records
	862	Singing, humming	90	Radio
	909	Radio		
TV	919	TV	91	TV
Reading	939	Reading books	95	Read paper
	941	Reading magazines	94	Read magazines
	959	Reading newspapers	93	Read books
			97	Letters private
	942	Reading NA what, or other		
	979	Letters, mail, reading or writing		
Conversation	961	Phone conversation	96	Conversation
	962	Other talking, conversations	23	Talk to children
	963	Conversations with HH members		
	239	Talking, reading to children		
Resting and Relaxing	981	Relaxing	47	Resting
	982	Thinking, planning, reflecting	98	Relax, think
	983	Doing nothing		
	989	Other passive leisure, smoking dope		

Table B-7

Values for Location Variable

1 = Home (1975 data, home = inside and outside home, 1965 data, home = inside home only)
2 = Outside Home (1965 data only)
3 = Workplace
4 = Others Home
5 = Restaurant, Bar
6 = Indoor Leisure
7 = Outdoor Leisure
8 = In Transit
9 = Public Building, Other

These variables have been formatted so that HOME = inside and outside home. In order to obtain inside and outside information separately for the 1965 data (this cannot be obtained for the 1975 data), the location variables for inside and outside homes must be reformatted. This procedure is shown in the example given in Section 5.0.

Table B-8

Values for Company Variables

1 = Alone

2 = With Spouse

3 = With Children

4 = With Friends and Others

5 = With Spouse and Children

6 = With Spouse and Others

7 = With Children and Others

8 = With Others and Children

9 = Alone in a Crowd

The 1965 and 1975 company variables were originally coded as a two-digit number, the first digit indicating the primary company the respondent was with and the second digit indicating other social contacts present. These have been reduced to form the combinations listed above. Code 9, Alone in a Crowd, is only available from the 1965 data base due to differences in the way categories were defined. The original company codings from the 1965 data base, therefore, have been retained so that information about other combinations of company "in a crowd" can be accessed. The original 1965 company codes are described below. They can be accessed by referring to the variable names WITH and WITH2, described below.

1965 Coding of Social Contact Data

Respondents recorded for each activity in their diaries "with whom," or the "individuals present" while, it was performed. This social contact information was coded into two single columns as follows:

First column (variable name WITH)		Second column (variable name WITH2)	
0	alone	0	no other individuals
1	spouse, fiance	1	many unidentified people, a crowd
2	children in the respondent's household	2	children in the respondent's household
3	other adults in the respondent's household	3	other adults in the respondent's household

4	relatives, friends outside the respondent's household	4	relatives, friends outside the respondent's household
5	co-workers or fellow students	5	co-workers or fellow students
6	members of an organization	6	members of an organization
7	neighbors or other children	7	neighbors or other children
8	administrative personnel business clients	8	administrative personnel or business clients
9	others, unidentified	9	others, unidentified

Thus, if there was no social contact, the code was 00; and if there was only one contact, the second column was 0.

Codes varied depending on the order in which the respondent mentioned each contact. Thus, if the respondent reported "children and relatives," the code was 24; if it was "relatives and children," the code became 42. The only exception occurred for "spouses," who were always coded in the first column (thus 10 meaning alone with spouse, but 01 meaning alone in a crowd). If the respondent spent time in the company of persons belonging to more than two categories mentioned above, only two categories were coded, the two being chosen so as to reflect intuitively the greatest possible variety of responses. For example, if the diary reported time spent with spouse, children and neighbors, only spouse and neighbors (17) were coded. If the diary reported two persons in the same coding category, they were coded only once (i.e., two or more friends were coded 40, not 44).

Table B-9
Formats

The format names and the variables to which they correspond are listed below.

Format Name	Variable Name
ACTIV	PRIMARY (1975 only)
ACTIV2_	PRIMARY (1965 only)
COMPANYC	COMPANY
LOCATN	LOCATION
ISRTYPE	ISR_IDST
OCC_BRCH	OCC_BRCH
WORKTYPE	OCCUPATN (1975 only)
OC TYPE	OCCUPATN (1965 only)
SEX	SEX_OF_R
AGE	AGE_OF_R
M_STATUS	MARITLST
CHILDNO	NO_CHILD
WORK	WORK_STS
CAR	CAR
DAYWEEK	DAY_WEEK (1975, in diary file), DAY (1965, in background file)
ECO_CHAR	ECO_CHAR

The listing of the variable values assigned to each format name is provided in Table B-10.

Table B-10

```
 LISTING OF FORMATS


VALUES ACTIV
0,973=NONE
11,12,59,89,78,79=WORK
97-99,299,399,498,499,599,698,699,799,817,825,899,999=TRAVEL
109,119,129,149,161,172,173,191,193,197,412,421=INDOOR HOUSEWK
171,139,162-164,192=OUTDOOR HOUSEWK
22-24,301,302,311,312,339,341,342,351-354,379,389,329=SHOPPING
209,218,219,221,222,249,259,269,278,279=CHILD  CARE
409,411,422-424,481-489,652=PERSONAL CARE
69,439,449=EATING
459,469=SLEEPING
509,519,549,569,579=STUDY
601,602,611,612,621,622,631-635,641-644,651,661,662,671,672,689
     =ORGANIZATIONS
709,719,729,739,749='ATTENDING  ENTER.'
752,769,771,772,789=SOCIAL  ACTIVITY
801-808,811-816,818,821-824,826,888=ACTIVE  LEISURE
831-835,841-844,851,852,863,864,871-874,889=HOBBIES
861,862,909,929=MUSIC
919=TV
939,941,942,956,959,979=READING
239,961-963=CONVERSATION
981-984,989='REST &  RELAXATN';
****************;
VALUES COMPANYC
1=ALONE
2=WITH SPOUSE
3=WITH CHILDREN
4=FRIENDS & OTHERS
5=SPOUSE & CHLDREN
6=SPOUSE & OTHERS
7= CHLDREN & OTHERS
8=OTHERS & CHLDREN
9=ALONE IN A CROWD  ;
****************;
VALUES LOCATN
0=MISSING DATA
1,2=HOME
3=AT PLACE OF WORK
4='OTHER''S HOME'
5='RESTAUR-ANT,BAR'
6=INDOOR  LEISURE
7=OUTDOOR LEISURE
8=IN       TRANSIT
9='OTHER,  PUB.BLD.';
****************;
```

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```
VALUES ACTIV2_
0-2,4,5,7,8=WORK
3,9,29,39,49,59,69,79,89,99=TRAVEL
10-12,14-16,18,19,42=INDUOR HOUSEWK
13,17=JUTDOOR HOJSEWK
30,31,33-37=SHOPPING
20-22,24-27=CHILD  CARE
32,40,41,48=PERSONAL CARE
6,43,44=EATING
45,46=SLEEPING
50-56=STUDY
60-68=ORGANIZATIONS
70-74='ATTENDING  ENTER.'
75-78,87=SOCIAL  ACTIVITY
80-82=ACTIVE  LEISURE
83,85,88=HOBBIES
86,90,92=MUSIC
91=TV
93-95,97=READING
23,96=CONVERSATION
47,98='REST &  RELAXATN';
***************;
VALUES OCTYPE
0=NOT WORKING
1=UNSKILLED
2,8='SKILLED,SEMI-SKD'
3=TECHNICAL
4='LWR. WHT. COLLAR'
5='UPR. WHT. COLLAR'
6=PROFESSIONAL
7=FARMERS;
****************;
VALUES SEX
1=MALE
2=FEMALE;
***************;
VALUES AGE
1='UNDER 30 YRS.'
2='30-39 YRS.'
3='40-50 YRS.'
4='OVER 50 YRS.';
******************;
VALUES M_STATUS
0=MARRIED
1=SINGLE
2=OTHER;
******************;
VALUES CHILDNO
0=NO CHILDREN
1='1+ CHILD UNDER 4'
2='ALL CHLDN OVER 4';
******************;
VALUES WORK
1=HOUSEWIFE
2=EMPLOYED WOMEN
3=EMPLOYED MEN
4=STUDENT
5='NON-WORKER';
******************;
```

Table B-10 (Concluded)

```
VALUES CAR
0=CAR OWNER
1='NON-CAR OWNER';
****************;
VALUES DAYWEEK
1=MONDAY
2=TUESDAY
3=WEDNESDAY
4=THURSDAY
5=FRIDAY
6=SATURDAY
7=SUNDAY;
******************
VALUES ECO_CHAR
3=URBAN CITY
0,1=INDUST.,BUS.CITY'
2,4=SUBURBAN CITY
5,6=RURAL;
****************;
83,85,88=HOBBIES
86,90,92=MUSIC
91=TV
93-95,97=READING
23,96=CONVERSATION
47,98='REST &  RELAX';
****************;
VALUES ISRTYPE
11=AGRICULTURE
21='EXTRACT.INDUSTRY'
30-49=MANUFACTURING
51=CONSTRUCTION
55-57,86='TECH.PUBLIC SER.'
91,92='ADMN.PUBLIC SER.'
71,82= 'FINANCE,R.ESTATE'
61,62,69='TRADE & RETAIL'
84,85,87,88='EDUC. & CULTURAL'
81,83=OTHER;
****************;
VALUES OCC_BRCH
0=AGRICULTURE
1=EXTRACTIVE INDUSTRY
2=MANUFACTURING
3=CONSTRUCTION
4='TECH.PUBLIC SER.'
5='ADMN.PUBLIC SER.'
6='FINANCE,R.ESTATE'
7='TRADE & RETAIL'
8='EDUC. & CULTURAL'
9=OTHER;
***************;
VALUES WORKTYPE
96-98=NOT WORKING
70,75=UNSKILLED
51,52,55,61,62='SKILLED,SEMI-SKD'
16,50=TECHNICAL
40,41,45='LWR. WHT. COLLAR'
20,31='UPR. WHT. COLLAR'
10-15,17=PROFESSIONAL
71,80=FARMERS;
***************;
```

APPENDIX C

Literature Review

Time-budget studies, the social research concerned with the quantitative analysis of time, has its origins in studies of working class conditions in Europe at the turn of the 19th century. These early studies were based on economic rather than temporal interpretations of social activity. In the mid-1800's, Frederick Le Play and Edward Engles[1] made quantitative investigations of family financial budgets to reflect the contemporary living conditions of the working class. These methods of analysis soon went beyond the use of money and examined the use of time or time budgets as a measurement of human activity.

An empirical approach to time budget research first appeared in the 1920's and '30's in the Soviet Union, Great Britain and the United States. In 1924, Stromlin of the Soviet Union gathered time-budget data for the purposes of governmental and communal planning.[2] In the United States, Lindberg and his associates conducted the first serious time-budget study on leisure; and Sorokin and Berger took a more general approach to human activities in their work Time-Budgets of Human Behavior.[2] Later, Kate Liepman of Great Britain applied time-budget research to the length of commuting time (1944).[1] Other efforts followed in other countries, but the bulk of time-budget studies occurred after World War II with the refinement of sociological investigative techniques and the development of computer technology.

The main focus of post-World War II time-budget studies has been on the use of free time and leisure. Despite the great impetus to time-budget research that leisure time studies provided, Szalai cautions[3] that leisure can only be meaningfully interpreted within the total context of human life activities, an aspect which many studies neglected.

Broader sociological applications of time-budget research have come, for the most part, from France. French sociologists Paul Chombart de Lauwe, Naville and others have used time-budget investigatons for the purposes of social analysis. Chombart de Lauwe applied these techniques to family adaptation to urban conditions, and Naville addressed the impact of industrialization on the family.[1]

In the Soviet Union and socialist Eastern European countries, time-budget studies have assumed a more important role. Large scale investigations into labor resources and industrial sociology have been applied to government economic planning in the Soviet Union. Hungary has included the collection of time-budget data with census data; and other European countries have applied time-budget information to communal planning.

In Western Europe and Japan, time-budget studies have been utilized in policy planning concerned with mass media and transportation. The largest national time-budget survey based on 170 thousand interviews was conducted by the Japanese Radio and Television Culture Research Institute in 1960-61 to aid in planning radio and television programs. The results of the data collected were tabulated to show how many and what kinds of people were performing any specific activity at any hour, and when people were to be found at various locations.[3] The study proved so useful that it was repeated in 1965 to determine the effect the spread of television had on the daily activities of the Japanese (Nakanishi, 1965).

With a few exceptions, relatively little has been done in the United States in terms of new applicability and new methodology of time-budget research. Foote and Meyersohn,[2] in 1959, presented an innovative approach to methodologic techniques of classification and analysis of responses. The majority of time-budget applications in the States, however, have been in the use of free time and leisure, with a major emphasis on television viewing. DeGrazia in his study of Of Time Worked and Leisure (1962) examined the conceptual and definitional issues connected with the study of work and leisure, and Hammer and Chapin (1962) examined the choices and constraints involved in leisure activities.[2] Other uses of time-budget research have been in time spent commuting, activities of housewives (Walker and Woods, 1976), lifestyles of the elderly, and studies on research in industry. Chapin and his associates (1974) have developed time data models for transportation and land use policy deliberations.[4] The broadest, most comprehensive study of time budgeting of daily activities in the United States, however, has been conducted in the form of a national study of time allocation (Robinson and Converse, 1965), undertaken as part of a multinational comparative time-budget research project.[4, 5]

The Multinational Comparative Research Project was the most extensive series of time-budget studies ever undertaken. It was organized in 1965 by Szalai[6] for the purpose of establishing an international time-budget data base that could be used in comparative social research. To provide information for a more in-depth analysis of social behavior, the studies were designed to take a number of human activity variables often dealt with individually, in separate time-budget studies, and to obtain the data on all of these aspects simultaneously. Szalai was interested in temporal attributes (duration, frequency, sequence, and time of occurrence); spatial attributes (location); and social attributes (performer, activity, persons involved, and concurring activities) of human activities. The results of these studies focused on analyzing the differences in the way time is spent in the 12 participating countries, and between various population strata in the same country.

The 1965 time-budget study performed in the United States, as part of the multinational research project, investigated the activities of a sample of over 1,200 people for a 24-hour period.[4, 5] This study focused on an urban population of employed men, employed women and housewives. A diary approach for recording information was employed, and the results were classified into 96 primary activity categories as well as separate categories for location, human company, secondary activities, and time occurrence and completion. Some of the results from this study are illustrated in Figures C-1, C-2, and C-3. A new version of this time-budget research was conducted by Robinson in 1975-76, with a sample of 2,500 people and 4 days of diary for most of the respondents. Unlike the 1965 study, this research sample was completely nationally representative, including rural areas, farmers, the unemployed, students, and the retired.[7]

Together, these two time-budget studies offer a wealth of information regarding human activities in the United States, and, with highly sophisticated computer programs, offer interesting possibilities to analyze a practically unlimited number of activity correlations and sequential patterns, and to assess their predictive value in any studies requiring knowledge of peoples' time-budget profile. To date, the 1965 time-budget data has been used to estimate the accumulated radiation hazards from nuclear-powered pacemakers; the departures from "a normal day's activities" caused by accident or injuries; the effect of household technology on housework; the amounts of leisure time available to people in various

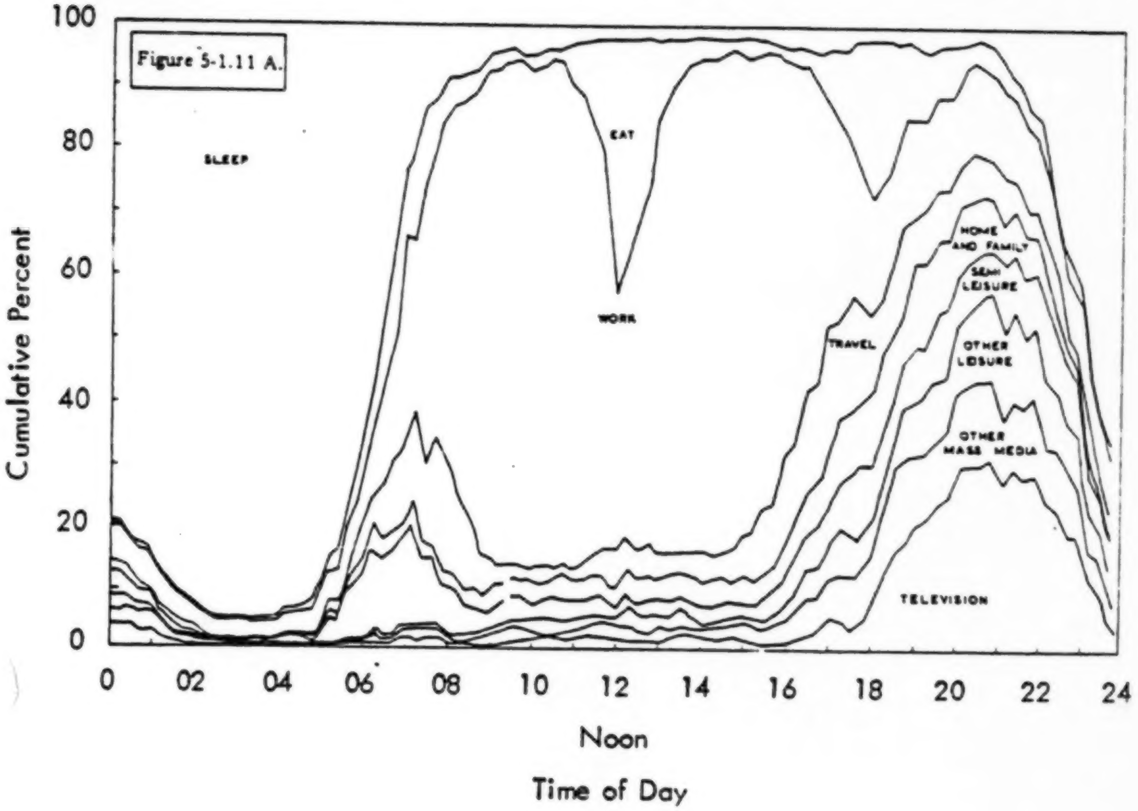

Figure C-1. Cumulative Percent Distribution of Average Activity of People, Age 18 to 65, in U. S. Cities Over 50,000 Population (from Reference 2)

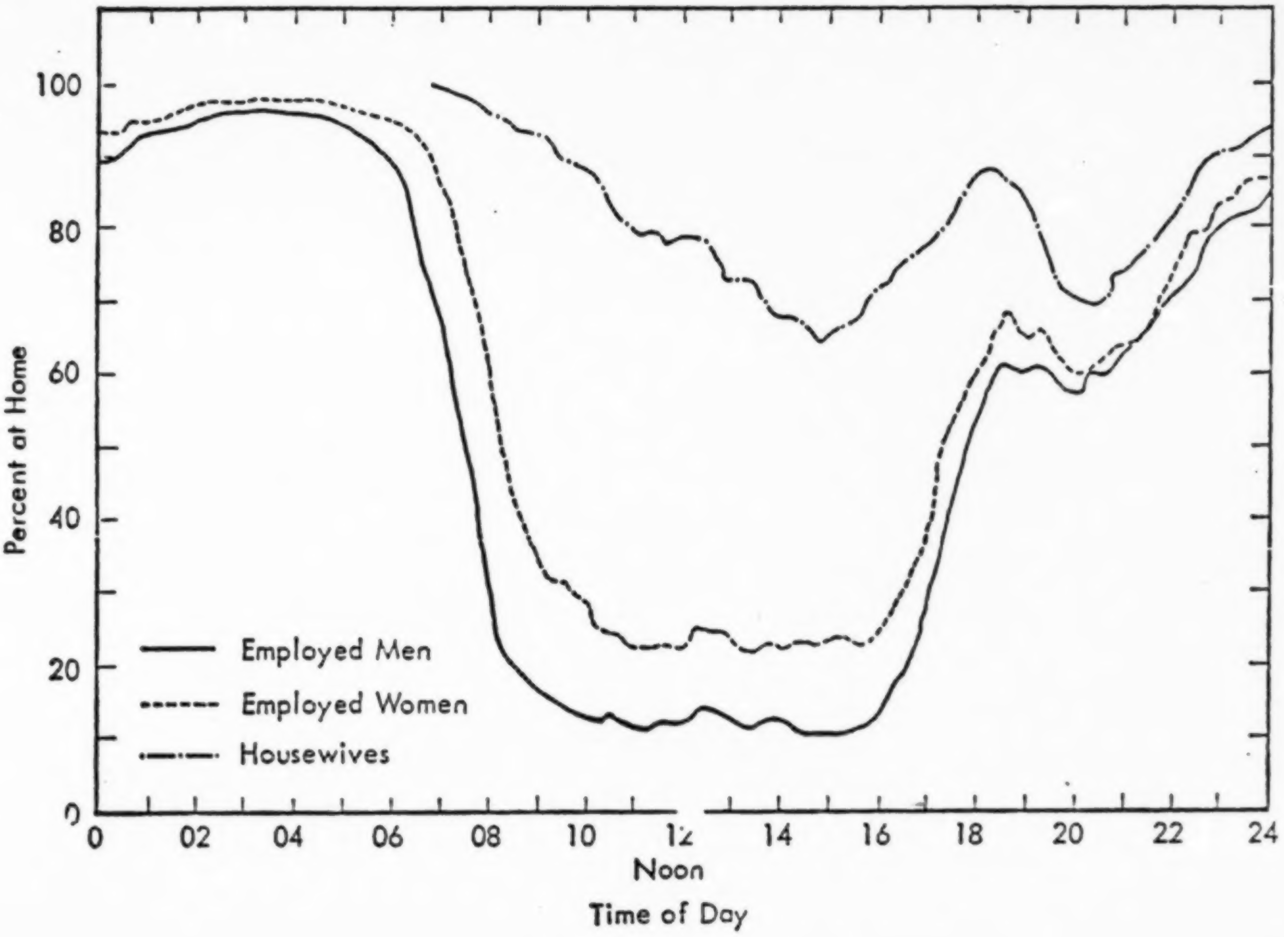

Figure C-2. Estimated Percentage of People, at Home During Weekdays, Age 18 to 65, in U. S. Cities Over 50,000 Population (from Reference 2)

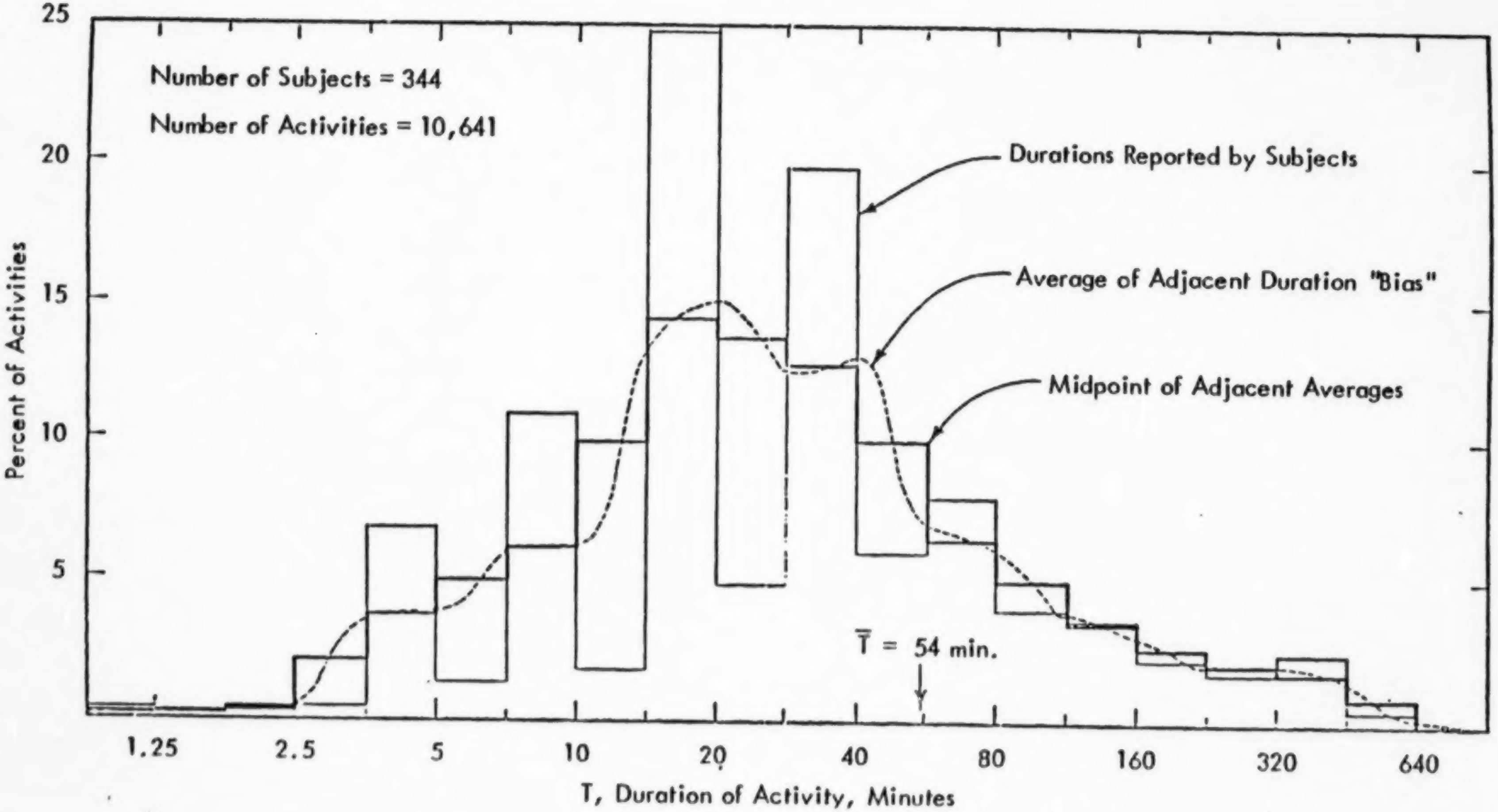

Figure C-3. Distribution of Activity Durations from National Time-Budget Study
(from Reference 2)

social and economic classes, the inaccuracies in the standard rating service figures on television and other mass media; the relationship between noise and birth defect;[8] and, together with the 1975 data, has been used to analyze and predict social trends based on American's use of time.[7]

Other, less detailed information on daily human activities, has also been gathered and utilized in a number of personal noise exposure studies.

In a feasibility study of various measurement techniques sponsored jointly by the U. S. Department of Transportation and the U. S. Environmental Protection Agency,[9] information on activities, heartrate, plethysmograph output, and noise exposure was gathered for four persons over a 24-hour period. Since a person's noise exposure is greatly determined by his lifestyle, background information on all the individuals monitored was also gathered. A sample of the statistical measures of hourly noise exposure with activity for each subject is shown in Figure C-4, and the resulting values of the energy-averaged daytime personal noise level for the four subjects are listed in Table C-1, along with the corresponding values of daytime outdoor noise levels at the residential site where the subject resides. In general, it was found that the personal (noise) dose was of the order of 75 dB(A) for the subjects and, as expected, was not well-correlated with the outdoor noise environment at their residence.

In a dosimeter study performed by Johnson and Farina,[10] an individual's 24-hour noise exposure was monitored for 31 consecutive days. The daily A-weighted average sound level for each 24-hour period was measured, as well as the noise exposure from specific activities during the day. Results showed that the type of activities that contributed most of the subject's total noise dose was nighttime parties at private homes, or nightclubs, with other exposures at bowling alleys and an automobile hobby shop also making a major contribution. The study concluded that had these recreational activities been avoided, the 31-day average sound level would have been reduced from 76 dB to 71 dB.

Information on human activities and background data (sex, age, occupation) was also gathered on participants in a dosimetry study performed by Schori and McGatha.[11] In this study, the noise exposure of 50 individuals was continuously monitored for seven consecutive days using personal noise dosimeters. Results of the study showed that 80 percent of the individuals have an average $L_{eq(24)}$ noise dose which exceeded levels recommended by the Environmental Protection Agency

Table C-1

Summary of A-Weighted Daytime Average Noise Levels (L_d) for the Four Subjects and at the Outdoor Sites Near Their Residences

Subject	Site	L_d, A-Weighted Average Noise Level dB re 20 μPa	
		Personal	Outdoor
No. 1	Airport	69	65.7
No. 2	Airport	73	65.7*
No. 3	Freeway	77	61.0
No. 4	Suburb	78	55.3*

*Measured on same day for subject and outdoor site, however, subject's total daily noise exposure included activity away from home.

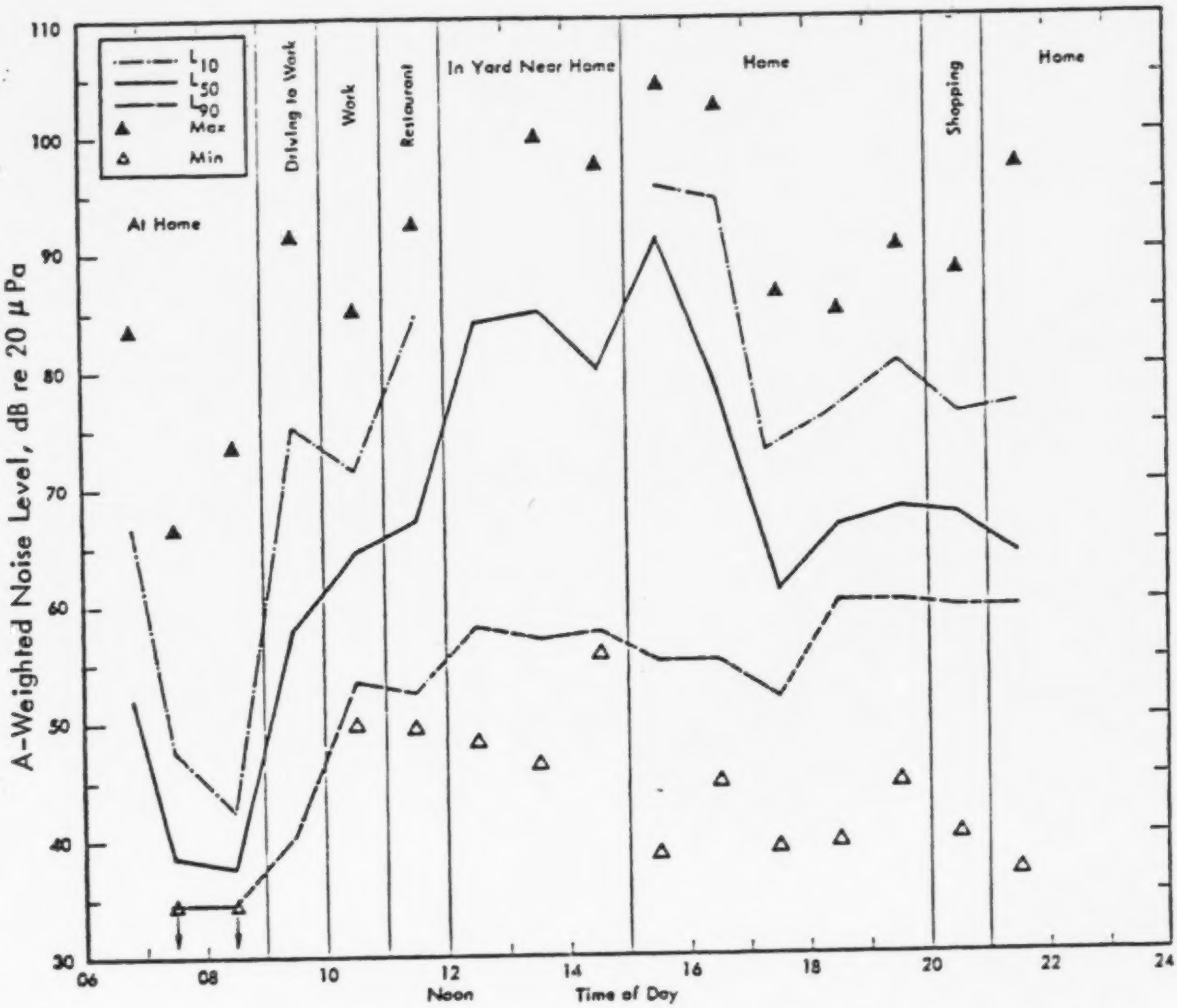

Figure C-4. Statistical Measures of Hourly Noise Exposure for Subject Number 4 - Monday as safe daily exposures with an adequate margin of safety. Average daily activity information was gathered for the participants with the highest exposure levels, and more specific activity noise level information was obtained for 12 other participants. The identifiable activities that produced the five highest average sound levels were working with a jigsaw (91.6 dB), attending a rock concert (90.2 dB), riding in an automobile (86.0 dB and 93.6 dB), and attending church (85.1 dB). Average sound levels were also obtained for a number of other activities. In comparing nonoccupational noise exposures ($L_{eq(night)}$) to daytime noise levels, the study found that nonoccupational noise exposure could not be considered negligible, with average levels just 1.7 dB less than daytime L_{eq}.

A recent study in Japan also examined personal noise exposure and activity data through a noise dosimetry program. Sone, Nimura, and Kono[12] obtained noise measurement data on 216 individuals in a study aimed at investigating and classifying the amount of personal noise exposure per day by a person's profession, living environment, method of transit and his activities. They utilized results obtained from a 1975 NHK Public Opinion Poll "Survey on the Use of Time in Japan" (with a sample size of over 1,000 individuals) to determine average daily noise exposures. Results from their survey indicated that 31 percent of housewives and 73 percent of workers are exposed to noise levels higher than those recommended by the Environmental Protection Agency (70 dB, $L_{eq(24)}$).

Despite the number of studies conducted in the United States on personal noise exposure and human activity, none provide sufficient details about human activities for an adequate sample size so that information regarding personal noise exposure could be applied to populations outside those used in each individual study. The recent study in Japan, cited above, has made an effort to correlate personal noise exposure and human activities on a larger scale; however, prior to this present study, no such efforts have been made in the United States. By utilizing the computer program, created in this study, to analyze the 1965 and 1975 national human activity profiles and applying the results to personal noise exposure data, daily personal noise exposure in the United States can be more accurately assessed.

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